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RESEARCH REPORTS

ON COMPREHENSIVE SOCIAL SECURITY AND RETIREMENT REFORMS

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14A Jellicoe Avenue, Rosebank
Johannesburg, Gauteng

Tel: (011) 328 4200
Email: info@nedlac.org.za
Website: www.nedlac.org.za

FOREWORD

The National Economic Development and Labour Council (Nedlac) is an institution for social dialogue established through the Nedlac Act of 1995. It is through this institution that the joint government discussion document on Comprehensive Social Security and Retirement Reform (2012) was engaged.

Section 27 of the South African Constitution enshrines the right of access for all, on the social security and the appropriate social assistance. This right of access is to be advanced progressively in accordance with the state's available resources. This includes not only state provisioning of support, but also the state's role in regulating private sector provisioning to ensure governance compliance as well as providing optimal access to all schemes that provide private access to social security. South Africa 's social security system still rests on the policy pillars built under Apartheid. The need to build a new and inclusive system that seeks to correct the levels of poverty and inequality in South Africa is one that is recognised by all social partners in Nedlac.

The Comprehensive Social Security Retirement Reform Paper (2012) was approved by Cabinet in 2016 for engagement by Nedlac social partners. Thereafter, Government formally tabled the paper at the Management Committee, a structure of governance at Nedlac. The Management Committee established a Task Team with a mandate to engage on the Comprehensive Social Security and Retirement Reform proposals and provide inputs to the paper which could become a Government Policy. This Task Team consisted of Nedlac social partners which are; organised Labour, organised Business, Community and Government.

The Task Team produced an interim Nedlac report which is a document where the Nedlac social partners set out their mandated positions in May 2018. However, the social partners agreed that there was a need for further research on specific policy related matters.
The proposed research areas were as follows:

a. Economies of scale and value for money in respect of the retirement system in South Africa by ***Nervyia Pillay and Johannes Fedderke,*** which was commissioned by National Treasury and the report was concluded in April 2021.
b. Impact of the NSSF on the investment environment and capital markets by ***Deloitte,*** which was commissioned by Nedlac and the report was concluded in February 2021.
c. Feasibility of the Basic Income Grant by ***Deloitte,*** which was commissioned by Nedlac and the report was concluded in March 2021.

d. Coverage of Informal Workers by ***True South Actuaries and Consultants,*** which was commissioned by the Department of Social Development and the report was concluded in November 2019.
e. Actuarial Sustainability of the National Social Security Fund (NSSF) by ***the ILO,*** which was commissioned by the Department of Social Development and the report was concluded in November 2020

The Task Team through a Research Reference Group (RRG), engaged with the researchers and accepted the research reports as information that could be used as a guide on their engagements and their positions on Comprehensive Social Security and Retirement Reform. The research reports contain analysis and set of findings which were derived from the different methodological approaches used by the researchers on each research subject.

Following the conclusion of the research, a final Nedlac report was tabled by the Task Team regarding its progress in August 2021, and was signed off by the Task Team leads and the Nedlac Overall Convenors.

Research findings and the views in each of these research reports are those of the authors and not Nedlac nor its Social Partners. However, given the importance of the national debates on comprehensive social security, the Nedlac Task Team has agreed to share the abovementioned research reports.

Signed by:



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LISA SEFTEL
EXECUTIVE DIRECTOR

SUMMARY OF THE RESEARCH REPORTS

Background to the Comprehensive Social Security and Retirement Reforms Task Team

The Taylor Committee of Inquiry into a Comprehensive System of Social Security in 2002 began a process of analysis and engagement on the future of the social security system. This work continued within government through an Inter-Ministerial Committee of 2007 and the Inter-Departmental Task Team on Social Security and Retirement Reform. In 2011, National Treasury issued its policy document, "A safer financial sector to serve South Africa better" dealing with regulatory and retirement reforms. The Executive Council (Exco) of Nedlac at its meeting on 28 February 2014, identified a range of issues, which included comprehensive social security for possible further consideration by Nedlac. A one-aside Manco committee was established to consider and determine a process for engagement on each of the issues that had been identified by Exco. The Manco Committee reverted to Exco on 30 June 2014 and recommended that a Manco task team should b6e established to engage on the Government paper on Social Security. It was therefore agreed to resuscitate the Manco Task Team on Comprehensive Social Security and Retirement Reforms. Government presented the Comprehensive Social Security paper, dated 2012, on 25 November 2016 at an Exco meeting. Exco subsequently agreed that Government would table the paper formally at Nedlac for engagement by Constituencies, in terms of the Nedlac Protocol. It was therefore agreed that the Manco Task Team on Comprehensive Social Security would be resuscitated to engage on Comprehensive Social Security. The Comprehensive Social Security paper dated 2012 was subsequently tabled at the task team on 04 April 2017. The Task Team engaged on the paper and they produced a Nedlac report, the Nedlac report however contained further areas of research on; Economies of Scale-value for money, the Financial Feasibility of Basic Income Grant (BIG), Coverage of Informal Workers, Actuarial Sustainability of the National Social Security Fund (NSSF) and its impact of the savings market, Impact on the investment environment and capital markets of the NSSF. The Task Team commissioned the research, engaged on the research and research reports were produced, these reports are on page 03 to page 363. Government subsequently updated the paper and it was tabled to Nedlac as a Comprehensive Social Security and Retirement Reforms Green paper on 06 May 2021. The task team engaged on the Green Paper and a Nedlac report was produced.

CSSRR Task Team Mandate

The mandate of the Nedlac's task team on CSSRR is to:

- Engage on a comprehensive social security and retirement reform system that is affordable, sustainable and appropriate for South Africa.
- Agree on a process of engagement and consultations on any proposals submitted by social partners including the delivery mechanisms and recommend those to the Nedlac Manco and/or Exco
- To ensure that the process of engagements will cohere with the principles of inclusiveness, participative as well as considering the interests of poor and vulnerable persons not currently represented at Nedlac.
- Identify and agree on the composition of research experts before work is commissioned.

Problem Statement

The South African social security system has a long history of disintegration due to apartheid discriminatory laws and policies. This resulted in the exclusion of the most vulnerable groups of society from social security coverage. This was addressed in Section 27 of the Constitution which enshrines the right of South Africans to a progressive realisation of social security and social assistance within the state's available resources. The State has an obligation to take reasonable legislative and other measures within its available resources to achieve the progressive realisation of the right in question. The National Development Plan also sets out a vision for comprehensive social security by 2030.

Commissioned Research

The following research studies contained in this report were commissioned by the CSSRR task team to contribute towards assisting Nedlac to make informed contribution on CSSRR. The five (5) research projects are as follows:

Title	Author
REPORT 1: ECONOMIES OF SCALE	Neryvia Pillay and Johannes Fedderke, International Labour Office
REPORT 2: ACTUARIAL STUDY OF THE PROPOSED NATIONAL SOCIAL SECURITY FUND	Actuarial Services Unit, Social Protection Department, Geneva Decent Work Team / Country Office, Pretoria, International Labour Office
REPORT 3: FINANCIAL FEASIBILITY OF THE BASIC INCOME GRANT	Actuarial & Analytical Solutions (A&AS) Team at Deloitte and Touché South Africa
REPORT 4: IMPACT OF THE NATIONAL SOCIAL SECURITY FUND ON SAVINGS AND INVESTMENTS	Actuarial & Analytical Solutions (A&AS) Team at Deloitte and Touché South Africa
REPORT 5: INFORMAL ECONOMY RETIREMENT AND RISK BENEFITS	True South Actuaries & Consultants

Purpose of this document

The purpose of this document is to communicate the findings from various research studies commissioned by the Nedlac's Task Team on Comprehensive Social Security. The research projects aimed to assist Nedlac social partners to make informed contributions in respect of a comprehensive social security system and retirement reforms. This first section summaries the five reports before the reports are presented.

Summary of Report 1: Economies of Scale



Report 1: Economies of Scale

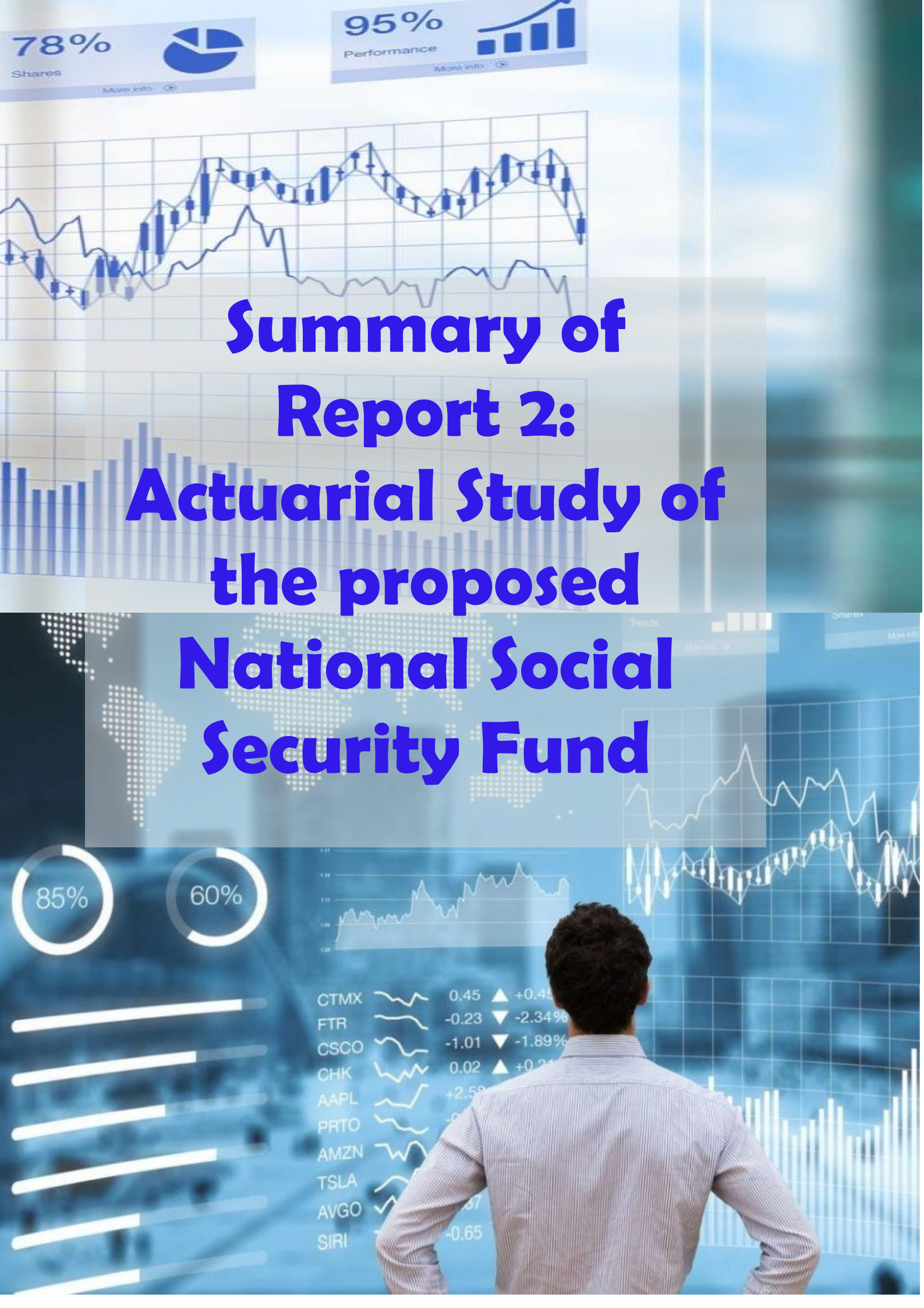
The purpose of the research was to study economies of scale in the South African retirement fund industry. Changes in the industry warrant an updated investigation into economies of scale in retirement funds. Given the importance of retirement funds in households 'wealth, this study was important to ensure that the system is well functioning and low cost.

Findings of the study:

- The initial examination of the data shows that there have been significant changes in the retirement fund industry over the period 2006 to 2018.
- There has been a general decrease in the number of funds, an increase in the average fund size, and an increase in average administrative expenses per member.
- The results suggest that over the earlier years 1996-2006, older funds had significantly lower cost elasticities than younger funds and the 23-year funds were much more efficient compared to all funds.
- The analysis by fund type reveals that these general trends conceal some important differences across fund class and benefit structure
- That the cost elasticity has increased somewhat from 0.705 over 1996-2006 to 0.731 over 2007-2018
- The overall evidence indicates that economies of scale do not meaningfully vary with fund size; with the exception of 23-year funds over 2007-2018 where the quadratic term is significant and indicates an optimal fund size of 300,000.

Recommendations of the study:

- It is recommended that a National Social Security Fund (NSSF) be proposed to fill the gap in South Africa's social insurance system.
- That the estimates contained in the report should be interpreted with caution since they are based on assumptions



Summary of Report 2: Actuarial Study of the proposed National Social Security Fund

Report 2: Actuarial Study of the Proposed NSSF

This actuarial study dealt with the implementation of a new NSSF in South Africa to carry out the projections as it is expected that the scheme will be in force in 2022. The methodology used for the pension branch is based on a model developed by the ILO for reviewing the long-term actuarial and financial status of national pension schemes. The model has been adjusted to fit the situation of the NSSF. The ILO's model is based on methodologies that are appropriate and consistent with accepted actuarial practice. The data related to the NSSF (contributors) used in this actuarial valuation are in general complete and of enough quality to undertake an actuarial valuation and to obtain a picture of the financial soundness of the NSSF. Some elements in the data collection process bring some uncertainties to the actuarial valuation:

- The mortality rates, the invalidity rates, and the retirement rates of the new insured populations because no experience exist.
- The impossibility to match the financial statement of UIF with the data that has been transmitted.

The assumptions in this study are appropriate both individually and as a whole. They are also consistent taken together. Assumptions are established to reflect long-term trends rather than giving undue weight to recent experience. The objective of pension projections is not to forecast the exact development of the scheme's income and expenditures, but to verify its financial viability over the long-term.

Findings of the study:

- The 10 per cent contribution rate is not sufficient to finance all the expenditures on a fully funded approach.
- With a contribution rate of 10 per cent:
  - Total expenditures will be higher than contributions starting in 2052. In 2052, investment incomes will be used to pay the expenditures.
  - In 2091, the contributions and the investment income are no longer enough to pay the expenditures, the reserve starts to decline.
  - In 2104, the reserve is depleted.
  - The non-introduction of eligibility conditions may considerably increase the cost of the scheme particularly for the invalidity and survivors' branch.
- The risks the new NSSF will face depends considerably on the way the scheme will be financed.
- It is possible to introduce a new parameter in the design of the scheme to make the scheme less expensive in terms of contribution rate for individuals having lower income
- Impact of increasing the retirement age may differ according to the way people react to the increase. However, increasing the retirement age should have an important positive impact on the financial sustainability of the scheme.
- The general coverage rate by age and sex will remain unchanged over the projection period. In other words, the number of male and female covered under the scheme will increase at the same pace as the number of male and female employed in South Africa over the projection period
- The average full-time salary sometimes decreases with the age in both sectors. This valuation assumes that this pattern will not last: the salary scales of all cohorts of members is projected to gradually evolve over the projection period, increasing at least with the inflation rate each year

Recommendations of the study:

- According to the provisions described in **Annexure 1:** , the full funding contribution rate is 12 per cent.
- If a 25 per cent funding ratio is desired, as it is presently discussed, the contribution rate will have to double in the very long run



Summary of Report 3: Financial Feasibility of BIG

Report 3: Financial Feasibility of the Basic Income Grant

The purpose of this research was to assess the fiscal feasibility of providing income support to individuals who are between the ages of 18 to 59 in South Africa, considering the following:

- The nature of income support (universal or means tested, and conditional or unconditional);
- The value of income support (cover nutritional needs, reduce poverty or provide a certain standard of living);
- Links to the labour market;
- The macroeconomic and socio-economic impacts; and
- The delivery mechanisms.

Despite, the fiscal significance of implementing the Basic Income Grant (BIG), the BIG should be viewed as a means to restructuring income in South Africa which suffers from the triple challenge of poverty, unemployment and inequality. It is widely recognised that social assistance, particularly through the Old Age Grant (OAG) and Child Support Grant (CSG), has contributed significantly towards the reduction of poverty levels in South Africa.

Findings of the study:

- Implementing a BIG has the potential to make significant inroads into improved income equality in South Africa and possible economic gains through the multiplier effect.

- Implementation of a universal BIG at the level of the current special COVID-19 Social Relief of Distress Grant has the potential to reduce the concentration of income of the top 10% to 49.9% in 2019/2020 on an income per capita basis to just below 47.1% by 2024/2025. The share of household income per capita as a percentage of the total in the lowest income decile is projected to increase from 0.8% in 2019/2020 on an income per capita basis to 7.0% by 2024/2025. The corresponding income per capita Gini co-efficient decreases from 0.61 to 0.49, representing a 20% decrease.

- A BIG could impact macro-level economic growth directly, through increasing household productivity and employment, stimulating aggregate demand, affecting labour force participation, and influencing savings and taxation. Based on analysis of the multiplier effects of the BIG at the level of the current special COVID-19 Social Relief of Distress Grant, the grant has the potential to positively contribute around 0.5% to GDP growth over the forecast period through improved household demand as well increase employment by 4.0% by the end of the projection period.

- Basic income assistance supports investment into human capital development, for example: improved nutrition, health care, housing and transportation. The importance of human capital, in particular with respect to health education, in social and economic development is widely accepted. There is a strong correlation between Gross Domestic Product (GDP) per capita and education levels and life expectancy as a proxy for the level of health in a population.

- If funded through Personal Income Tax (PIT), a universal BIG at the level of the special COVID-19 Social Relief of Distress Grant would result in an approximate average increase in effective tax rates of 8.2% across taxable income bands considered for 2023/24. A universal BIG at the LBPL would result in an approximate average increase in effective tax rates of 19.8% across taxable income bands considered for 2023/24. A

universal BIG at the UBPL would result in an approximate average increase in effective tax rates of 30.0% across taxable income bands considered for 2020/21. Similar results arise under the High Road Scenario.

- The projected clawback of the cost of implementing the BIG through PIT under the universal scenario represents approximately 5% of the cost of a universal BIG (at all levels of BIG considered). This relatively small clawback is a result of the large number of recipients that fall in the lowest taxable income band (including those that who do not earn any taxable income) and hence are not subject to PIT, reinforcing South Africa's relatively small tax base. This small tax base is a symptom of South Africa's high and persistent inequality. Inequality in South Africa, as measured by the consumption Gini coefficient, was 0.61 in 1996, increasing to 0.63 in 2014[1]. This is despite the efforts to reduce inequality that the government has made since 1994.

- The Inequality Trends Report by Statistics South Africa (StatsSA) found that labour market activity largely influenced the level of inequality within the economy, stating that about 67% of total inequality was driven by inequality in earnings. Income from the labour market had accounted for the largest proportion of income inequality at about 77.2% in 2006, decreasing to 74.2% in 2015. Wage distributions of South African income earners was found to have a "long upper tail" – highlighting that the bulk of the population was comprised of low-income earners, while the top decile of income earners held a substantial majority of the national income.

- That economic effect of COVID-19 will include reduced revenue collection. PIT, Corporate Income Tax (CIT) and Value Added Tax (VAT) collections are expected to fall substantially over 2020/21. Given the economic impact of COVID-19, the capacity to raise PIT, CIT and VAT tax rates is limited. National Treasury has signalled the possibility of an inheritance tax and a "solidarity tax", which is regarded as a wealth tax, in a bid to raise additional finances for the fiscus.[2] The Davis Tax Commission (DAC) investigated the feasibility of a wealth tax. It was concluded that with the highly unequal levels of wealth in South Africa, a taxation system that ignores such inequalities in wealth, lacks legitimacy in the tax system.[3] It further concluded, however, that the introduction of a wealth tax cannot be implemented in the short-term.

Recommendations of the study:

- It is recommended that cost benefit analysis, determination of an appropriate tax base and provision of comprehensive data on the pattern of wealth ownership in South Africa should be undertaken before a decision on BIG can be made. This is to asses whether the tax revenue generated would exceed the administrative and economic burden on taxpayers and the South African Revenue Service (SARS).

- Given the significance of the cost of a universal BIG, alternative sources of taxation such as those mentioned above, should be assessed for viability in financing (partially or wholly) the implementation of a BIG. However, such alternative sources of taxation may only be practically implemented over the medium term, therefore PIT, CIT and VAT remain the alternatives over the short-term if implementation of a BIG takes place within the short-term.

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1 https://data.worldbank.org/indicator/SI.POV.GINI?locations=ZA&most_recent_year_desc=true
2 https://businesstech.co.za/news/finance/411919/the-taxes-which-are-likely-to-increase-in-south-africa-and-those-that-wont/
3 https://www.taxcom.org.za/docs/20180329%20Final%20DTC%20Wealth%20Tax%20Report%20-%20To%20Minister.pdf

- the furthermore, the implementation of a universal BIG lends itself to a financing base that is as broad as possible, in the interests of social solidarity. The cumulative effect of the combination of tax instruments should be progressive. The importance of social solidarity is in line with International Labour Organization (ILO) recommendation No. 202, which refers specifically to the principle of solidarity of financing.

- Implementing a targeted BIG will reduce the resulting cost and hence consequent funding requirements that will likely need to be met through taxation. Various scenarios are considered in this respect. However, targeting is associated with the administration burden and cost created by applying this targeting in practice. It is noted that certain the scenarios presented may not be practical to implement in relation to targeting and therefore should be considered for illustrative purposes only.

- Alternatively, the cost of implementing the BIG can be funded through the reallocation of public expenditure. However, reallocating public expenditure comes with trade-offs. Spending on health, education and social development currently accounts for 56% of government expenditure, as per the 2020 Budget Statement. Furthermore, the implementation of NHI is a policy priority, which will result in additional demands on the fiscus. Ultimately, the introduction of a BIG will require trade-offs with other development programmes, including other social security reforms and tertiary education.



Summary of Report 4: Impact of NSSF on Savings & Investment

- The level of NSSF contributions therefore impacts on the level of savings and investments attributed to the retirement system over the period considered.
- It is noted that the underlying investment strategy will influence the underlying asset allocation will differ dependent on the investment strategy of the NSSF. Investments under the NSSF may favour debt markets and public sector funding (conservative investment strategy) resulting in reduced level of investment for other asset classes even where the overall level of savings after implementation is expected to increase. This may increase the cost of capital for the private sector or increase the cost of equity compared to debt. Increases to the cost of capital for private sector will reduce the demand for investment or change the relative attractiveness of equity versus debt.

Findings on Changes in Consumption, Saving and Investment Behaviour of Households and Firms

- Under the Full Crowding Out Scenario, full displacement of contributions due to the NSSF will result in no change in consumption for those covered individuals where current effective contributions rates are higher than the NSSF contribution rate.
- It is noted that in respect of these individuals, it has been assumed that any increases in the absolute value of contributions payable will be met by the individual and not their employer.
- Approximately half of formally employed individuals are not covered in respect of retirement savings.
- Given the low coverage rates in respect of retirement savings based on formal employment for low-income earners, the impact of consumption will be most significantly felt by these individuals, given their ability to borrow is limited compared to high-income earners.
- It is noted that the average earnings of these individuals is R 45 000 in 2021 terms. Half of the contributions due to the NSSF will be met by employers, therefore firms will face increased employment expenditure.
- This will impact low-income earners more significantly and employment levels.

Findings on Changes in the Financing of Business Investment and in Capital Market Flows

- The extent to which the NSSF can support the State's ability to fund new business and infrastructure development will depend on the investment strategy that the Board of Trustees decides on.
- Given reduced sentiment towards South Africa, any reduced demand for South Africa government bonds can be mitigated to some extent by the increased funds available through implementation of the NSSF over the period to 2025, particularly in relation to a conservative investment strategy for the NSSF.
- Considering the long-term projections presented in Section **3.6.2**, the overall level of savings and investments attributed to retirement savings under Implementation of the NSSF is expected to surpass the overall level of savings and investments attributed to retirement savings under Applying the Status Quo over at least the next 30 years, with the exception of a NSSF contribution rate of 6% towards retirement benefits only.

Findings on Impact on Existing Retirement Funds

- Over the short-term, the impact on accumulated retirement savings as at 31 December 2025, is highest under the Full Crowding Out Scenario (15% NSSF contribution rate) given this scenario results in the most significant reduction in contributions to retirement savings.

- As noted above, reducing the NSSF earnings ceiling to the current UIF limit reduces the extent to which contributions to retirement savings are crowded out under the various crowding out scenarios hence increases projected retirement savings for all scenarios relative to an NSSF earnings ceiling of R 276 000 in 2018 terms.
- Over the long term, the implementation of the NSSF will reduce the accumulation of retirement savings compared to under Applying the Status Quo.

Recommendations of the study:

- Consultation with the workers operating in the informal economy regarding the recommendations set out in this paper is critical. This consultation must be thorough, open-minded and systematic
- It is therefore proposed that wage subsidies could be implemented to minimise disruptions to the demand of supply of labour associated with the introduction of mandatory contributions.
- Allowing for the implementation of the NSSF with an investment strategy in line with Regulation 28, investment in government bonds is projected to reach R 1 943 billion and investment in South African Equities R 3 575 billion under the Full Crowding Out Scenario allowing for NSSF contributions of 15%. Allowing for the implementation of the NSSF with a conservative investment strategy, investment in government bonds is projected to reach R 2 421 billion and investment in South African Equities R 3 275 billion under the Full Crowding Out Scenario allowing for NSSF contributions of 15%.
- Formally employed individuals are expected to be covered in terms of retirement savings over the period 2020 to 2025 allowing for Implementation of the NSSF and the various crowding out scenarios.
- The NSSF will be a defined-benefit social security fund in the form of a centrally managed public fund that aims to provide adequate retirement and risk benefit provision for the working population of South Africa.



Summary of Report 5: Informal Economy, Retirement & Risk Benefits

Report 5: Informal Economy Retirement and Risk Benefits

South Africa has a highly-regarded framework of social grants and a large private and occupational based pension system covering millions of workers. The workers are not currently required to preserve their savings and many of them cash in their pension accumulation when they change jobs, undermining the security of their provision for old age. This research considers the needs of the millions of workers employed or self-employed in the informal economy. The purpose of this research was to prepare technical inputs into the draft policy paper on the inclusion of informal sector workers into the mandatory retirement system

Findings of the study:

Findings on Constitutional considerations

- Imperatives flowing from the South African Constitution, 1996, have a decisive impact on the design of a contributory arrangement for informal economy workers. It is in particular necessary to appreciate the implications flowing from constitutional values and the fundamental rights most relevant to both contributory and non-contributory social security provisioning for informal economy workers, i.e. the right to access to social security, the right to equality, the right to human dignity and the right to fair labour practices. Given the vulnerable status of informal economy workers, in particular as a result of the insufficient social security support available to them, it could – in the light of the relevant constitutional provisions and developing jurisprudence – be constitutionally expected of government to roll out some kind of comprehensive programme to deal effectively with their plight. This matter is discussed in detail on Section **2.2**.

Findings on International and regional standards

- The South African Constitution affirms the importance of heeding international and regional standards (such as those emanating from the International Labour Organization (ILO), United Nations (UN), African Union (AU) and Southern African Development Community (SADC) instruments), both in terms of the binding nature of instruments that have been ratified by South Africa (such as the UN *International Covenant on Economic, Social and Cultural Rights*) and the obligation to consider even those standards that have not (yet) been ratified by South Africa. International and regional standards confirm the right of all persons and all workers, including informal economy workers, to social security protection, also in relation to retirement. For more details refer to details in Section **2.3**.

Findings on Comparative experiences

- The experiences of countries that have focused on successfully extending social security coverage to informal economy workers on a contributory basis, indicate the need for a conceptual understanding and an operational framework of social security which transcend traditional approaches and boundaries.
- Most of the comparative schemes provide coverage on the basis of defined contribution arrangements, on the assumption that for several reasons defined benefit arrangements entail too much risk to the scheme itself.

Findings on features of targeted membership

- Designing and operating a scheme for workers in the informal economy is rendered more challenging by the absence of a systematically-developed data set describing these workers. Information has been gathered from a combination of quantitative sources, notably the quarterly LFSs and annual GHSs, both published by Statistics South Africa (StatsSA), to put together a profile of the workers intended for the scheme. Even less

information is available concerning the earnings characteristics of the group. Section **4** describes the process of aggregating data from a number of sources. It is supported by the more detailed descriptions in three appendices, which describe the analysis of LFSs, GHS information (**Annexure 6:**) and a variety of sources combining qualitative and quantitative insights (**Annexure 7:**). Section **4.3** summarises by proposing a profile of the workers that form the targeted membership of the scheme.

Finding on benefit design, operations and financial modelling

- Designing a national pension arrangement from scratch is an intrinsically complex process. The variations available in the fundamental benefit structure, combined with a myriad of possibilities in the parameters utilised, renders the problem of optimisation fundamentally intractable. The uncertainty that characterises the demographic attributes of the targeted workers and the extraordinary volatility of their earnings from month to month only adds to the complexity. The benefit design itself is developed in Section **5** but its development is supported by the financial modelling that is described in Section **7**. The proposed operational and governance framework is set out in Section **6**. High-level results of the modelling describing the alternatives considered in the first part of the assessment are provided in **Annexure 13:** .

Findings on key financial metrics

- The financial modelling preceded on the basis that it would be appropriate to devote 80% of all contributions (including government subsidy) to saving for retirement. Sensitivity tests to changes in the 80% allocation to retirement (see Section **5.2.2** and **Annexure 12:**) describe the significance of the expected impact on the projected retirement benefit of reducing this allocation to funding the retirement benefit.

- The benefits available on death and disability are relatively low but considered adequate for the purposes of the scheme, as described in Sections **7.2** and **7.3** (refer to Section **5.2.2** and **Annexure 12:** for disclosure of the financial impacts of extending these benefits).

- The costs of administration are recommended to be borne by government and are summarised, for the first few years of the scheme (longer-term projections are provided in **Annexure 11** and sensitivities to changes in assumptions in **Annexure 12.**

- A key metric of the appropriateness of the benefits available on death and disability is the sustainability of the risk pool established for the purposes of providing for these benefits. This pool is funded by 20% of the contributions paid by members and the same proportion of the subsidy provided by government. The probability that this pool remains solvent through the period of the financial projection, 2020-2065, is calculated as 68%.

- An analysis of the costs and benefits associated with the scheme is rendered challenging by uncertainty regarding the number of workers in the informal economy, scheme take-up rates and the extent to which these workers already have saving in other arrangements, believed to be very low. Considerable support for the scheme nevertheless exists in the constitutional imperative that support for workers of all types need to be established on a basis that is fundamentally equitable.

Recommendations of the study

- It is recommended that the cost is met by addressing the regressive system of tax incentives currently available to formally employed South Africans with high incomes. If a wholesale restructure of the system of tax incentives is not considered feasible at present, then parametric changes could be considered to address the skewed system of government incentives and direct sufficient resources to supporting the system proposed in this study (refer to in Section **5.5** of report 5).

- Of particular importance when devising appropriate coverage modalities in the South African context, is the need to consult properly with institutions representative of workers in the informal economy (refer to the list of institutions in **Annexure 14:** .

- A system of automatic adjustors is recommended if the pool proves inadequate for the benefits ear-marked or if the assets in the risk pool grow inordinately large

- The process of developing and refining the benefit structure is described in Section **5**. The preliminary stages of identifying the criteria for assessment and analysing the four prototypes are described in the supporting material in **Annexure 8** and **Annexure 9** . The fundamentals of the financial modelling appear in Section **7**. This is also supported by two further descriptions. **Annexure 10** describes the methodology and assumptions utilised in the financial modelling, **Annexure 11** provides supporting detail and **Annexure 12** shows the sensitivity of results to changes in the key scheme parameters.

- It is recommended that the scheme under consideration be designed and operated as an extension of the National Social Security Fund (NSSF). There are several reasons for this but the most compelling of these are the economies of scale across two arrangements and the large number of workers likely to participate in and contribute to both parts of the intended holistic approach to pension provision. The principles of governance of social security entities that are described in Section **2.4** are reframed in the form of a concrete set of recommendations. These are set out in Section **6.2**.

- Care should be taken to ensure the independence of the governance framework. As a minimum, and assuming that the Scheme shares a governance platform with the NSSF, this should be guaranteed by supervisory and directory powers granted to an autonomous Board, whose mandate, powers, functions, rights and obligations are derived from the legislation specifically designed for the NSSF context. The composition of the Board should be tripartite in nature, and with representation of informal economy workers specifically guaranteed, in addition to key experts representing core required professional skills.

- It is also recommended that the Board be supervised by and report to an appropriate institution with regulatory powers to direct the Scheme/NSSF on an ongoing basis. Reporting should also be done to Government and the relevant Parliamentary portfolio committees. The Board should delegate key functions to properly mandated and staffed sub-committees that have the required mandate to manage key functions on behalf of the Board (such as in relation to investments), and guided by well-designed policy frameworks.

- The Board should also have the power to outsource certain key functions to outside professional service providers where these functions cannot otherwise be adequately provided, for example, managing the assets and investments of the Scheme/NSSF. Furthermore, the Chief Executive Officer and key senior officials of the Scheme/NSSF should be appointed and supervised by the Board. Operations of the Board, its sub-committees as well as the management of the Scheme/NSSF should be underpinned by ongoing monitoring and evaluation and informed by a state-of-the-art underlying information technology platform. Attention should be paid to client service, communication, education and training, specifically with a view to ensure that informal economy workers are adequately sensitised and provided with ongoing communication, also in the form of regular member statements.

Report 1

Economies of scale



Author: Neryvia Pillay and Johannes Fedderke

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Author:	Neryvia Pillay and Johannes Fedderke

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ABBREVIATIONS AND ACRONYMS

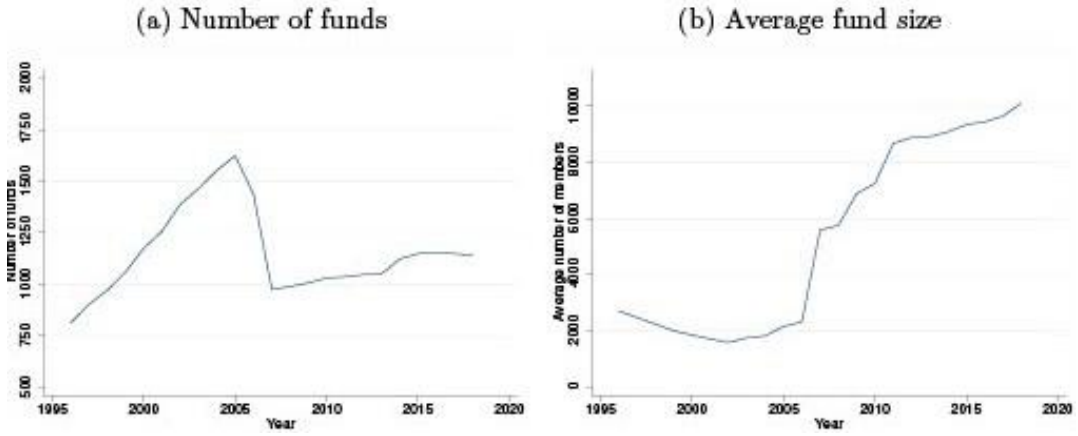
DSD	Department of Social Development
NSSF	National Social Security Fund
OLS	Ordinary Least Squares
Q4	Quarter 4
QLFS	Quarterly Labour Force Survey
StatsSA	Statistics South Africa

1. INTRODUCTION

In South Africa pension funds and life insurance constitute the largest category of individuals 'private wealth comprising 36% of total private assets, which is higher than in many advanced economies (Orthofer, Du Plessis, and Reid 2019). Given the importance of retirement funds in households 'wealth, it is important to ensure that the system is well functioning and low cost. While there may not be agreement on the characteristics of an optimal retirement funds system, it is generally accepted that cost efficiency is important. Administrative costs affect the net rate of return on retirement fund contributions and directly impact the ability of retirees to attain adequate income.

We study economies of scale in the South African retirement fund industry, building on earlier work by Touna Mama, Pillay, and Fedderke (2011) who found that there were between 25%-30% of unused scale economies in the retirement fund industry, with an optimal fund size of about 220,000 members. This finding was based on data from 1996-2006 and since then the number of funds has decreased, and the average fund size has increased significantly as shown in **Figure 1**.

Figure 1: Number of funds and average fund size over time, 1996-2018



Notes: Sample includes all normal active funds with non-negative member numbers and administrative expenses. Underwritten funds are excluded.

These changes in the industry warrant an updated investigation into economies of scale in retirement funds. We make use of an updated dataset that contains data on retirement funds through 2018 to study the effects of these industry changes on administrative expenses and economies of scale.

We begin by describing the data and presenting summary statistics in Section **2**. In Section **3** we examine economies of scale by first exploring whether economies of scale in retirement fund administration exist in Section **3.2**. In Section **3.3** we consider a related question–whether the cost-size relationship is concave, i.e. whether there is an optimal fund size with economies of scale for smaller funds and diseconomies of scale for larger ones. We examine whether economies of scale vary with fund age and fund characteristics in Sections **3.4** and **3.5**, respectively. In Section **3.6** we break down economies of scale across the seventeen administrative cost categories, and present a robustness check in Section **3.7**. Based on the results in Section **3**, we offer some recommendations on fund adjustments and consolidation in Section **4**. Section **5** provides some estimates for the administrative costs of the National Social Security Fund (NSSF) based on the results in this report. Finally, Section **6** concludes.

2. DATA AND SUMMARY STATISTICS

We use administrative data provided by the National Treasury that covers all retirement funds falling under its regulatory responsibility over the period 1996-2018. The data contains detailed information on administrative expenses, membership, assets, fund type, fund class, fund status, benefit structure, member contributions and benefits paid.

There are some limitations to the data. We are unable to split umbrella funds into Type A (open and thus more complex) and Type B (employer linked and thus less complex) and so have to group them together. This conceals the differences between the types of umbrella funds. We are unable to identify 'back-to-back 'funds, where a pension and provident fund have the same members, but all costs are reported under the provident fund. This will overstate the costs of some provident funds and understate the costs of some pension funds. Since individuals can belong to more than fund, there is some double counting of members that we are unable to identify.

We restrict the sample to include only those funds with a normal active status that report non-negative member numbers and administrative expenses. Underwritten funds are only reported in the dataset from 2005 onwards so, where appropriate, we present results both including and excluding these funds. Underwritten funds are typically smaller, and hence potentially more inefficient, and excluding them could create selection bias in the results.

Figure 2 shows average administrative expenses by fund size, measured by the number of total members, over the full sample period 1996-2018. It is evident from this figure that smaller funds have much greater variation in average expenses than larger funds, and that the largest funds all have very similar average expenses. There are also many smaller funds than larger funds in the South African retirement fund industry.

Figure 2: Average administrative expenses by fund size, 1996-2018

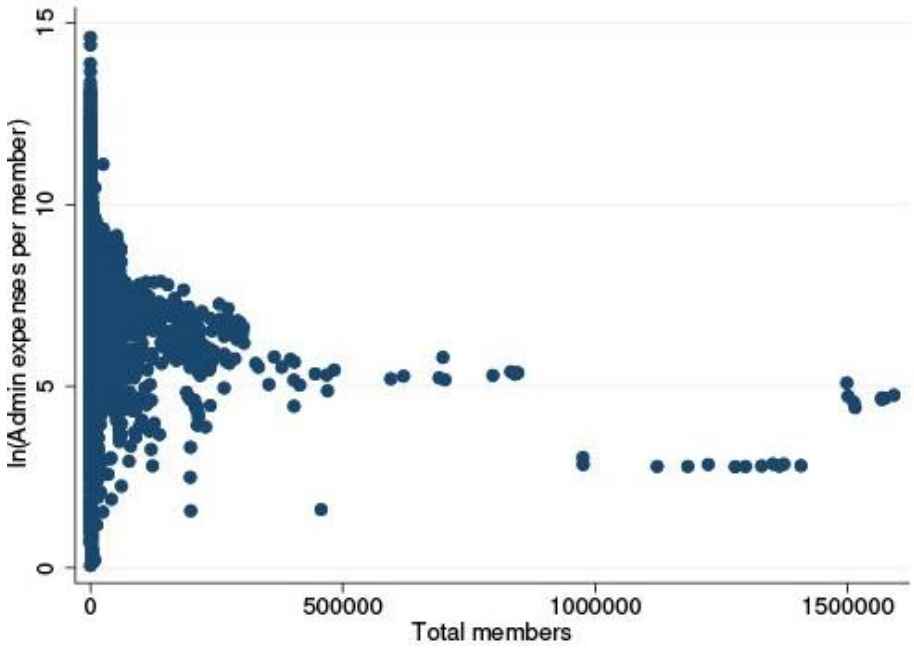


Table 1 shows administrative expenses by fund size for 2006 in Panel A, and 2018 for Panel B. The last available year of data used by Touna Mama, Pillay, and Fedderke (2011) was 2006 so comparing Panel A and Panel B gives a sense of how the industry has changed since then. It is evident that the industry is much larger with retirement fund membership more than tripling from 3.5 million members in 2006 to 13 members in 2018 (Column (4) of **Table 1**. Despite this large growth in membership, the number of funds has declined from 1,918 in 2006 to 1,262 in 2018 (Column (5) of **Table 1**) suggesting that there has been consolidation within the industry. The smallest fund sizes, i.e. those with less than 1,000 members, experienced decreases in the total number of members whereas the largest funds experienced a growth in membership indicating that the trend in the industry has been toward larger funds and away from smaller ones. Alongside these shifts, there has also been an increase in the average number of assets per member for all fund sizes with the exception of mid-sized funds (Column (3) of **Table 1**).

In both Panel A and Panel B of **Table 1**, Column (1) indicates that average administrative expenses are falling as the fund size increases, although average administrative costs have also increased from 2006 to 2018 for all fund sizes. The pattern is less clear when looking at administrative expenses as a percentage of total assets in Column (2) of **Table 1**. In 2006, administrative expenses as a percentage of total assets are generally falling as fund size increases except for the largest funds where this value increases again. In 2018, there does not appear to be a discernible relationship between fund size and administrative expenses as a percentage of total assets, but the largest value is still found for the smallest funds. Comparing 2006 and 2018, it is evident that administrative

expenses as a percentage of total assets has increased for all fund sizes except for the largest funds where this value has actually fallen.

Table 2 investigates average administrative expenses, number of funds, and av- erage membership by fund type, class and benefit structure for 2006 in columns (1), (2) and (3), and 2018 in columns (4), (5) and (6). Panel A indicates that the majority of funds are ordinary funds in both 2006 and 2018, but the total number of ordinary funds is declining over the period while the number of preservation and umbrella funds is increasing (columns (2) and (5). The average fund size is increas- ing from 2006 to 2018 across all fund types and umbrella funds are now noticeably much larger. Real administrative costs per member have increased from 2006 to 2018 for ordinary and umbrella funds, but fallen for preservation funds.

Panel B of **Table 2** breaks down the results by the class of fund. We see that the average fund size is much higher for all fund classes in 2018 than in 2006, although the number of pension and provident funds is declining. Average administrative expenses have decreased for provident funds over the period, but increased for pension and retirement annuity funds. The same pattern of increasing average fund size and decreasing number of funds is seen across different benefit structures in Panel C. However, average administrative expenses have fallen for defined contribution and hybrid plans but increased for defined benefit plans.

The analysis in this section shows that there have been significant changes in the retirement fund industry over the period 2006 to 2018. There has been a general decrease in the number of funds, an increase in the average fund size, and an increase in average administrative expenses per member. The analysis by fund type reveals that these general trends conceal some important differences across fund class and benefit structure. In particular, average administrative costs per member have actually decreased for preservation, provident, defined contribution and hybrid funds from 2006 to 2018. This suggests that there is likely to be a change in the economies of scale results originally found over 1996-2006 by Touna Mama, Pillay, and Fedderke (2011). In the next section, we undertake regression analyses to more closely examine these changes.

Table 1: Administrative expenses by fund size, 2006 and 2018

	Administrative expenses per member	Administrative expenses/total assets	Total assets per member (R1,000)	Total number of members (1,000)	Number of pension funds
	(1)	(2)	(3)	(4)	(5)
Panel A: 2006					
0–100	7,056	2.70	916	25	762
100–1,000	2,314	1.01	465	294	793
1,000–10,000	1,243	0.68	483	871	312
10,000–100,000	705	0.64	357	1,173	46
100,000+	140	2.24	7	1,181	5
Avg/Total	**3,979**	**1.62**	**643**	**3,545**	**1,918**
Panel B: 2018					
0–100	13,880	3.44	2,168	8	235
100–1,000	2,599	1.08	556	204	465
1,000–10,000	1,424	0.86	366	1,419	419
10,000–100,000	1,176	1.35	245	3,413	120
100,000+	645	1.11	103	7,866	23
Avg/Total	**4,139**	**1.48**	**756**	**12,911**	**1,262**

Notes: Sample includes all normal active funds with non-negative member numbers and administrative expenses. All Rand values expressed in constant 2016 Rands.

Panel B of **Table 2** breaks down the results by the class of fund. We see that the average fund size is much higher for all fund classes in 2018 than in 2006, although the number of pension and provident funds is declining. Average administrative expenses have decreased for provident funds over the period, but increased for pension and retirement annuity funds. The same pattern of increasing average fund size and decreasing number of funds is seen across different benefit structures in Panel C. However, average administrative expenses have fallen for defined contribution and hybrid plans but increased for defined benefit plans.

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Table 2: Administrative expenses by fund type, class and benefit structure, 2006 and 2018

	2006			2018		
	Administrative expenses per member	Number of pension funds	Average number of members	Administrative expenses per member	Number of pension funds	Average number of members
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Type of pension fund						
Ordinary	4,057	1,772	1,673	4,986	752	4,427
Preservation	6,885	26	1,158	4,027	122	9,301
Umbrella	2,201	120	4,583	2,531	388	21,770
Panel B: Class of fund						
Pension	4,465	923	1,934	5,628	605	7,826
Provident	3,538	976	1,769	2,670	611	10,207
Retirement Annuity	3,111	19	1,767	4,055	46	42,166
Panel C: Benefit structure						
Defined benefit	9,269	262	2,449	14,347	143	17,189
Defined contribution	3,113	1,617	1,710	2,842	1,092	9,394
Hybrid	4,380	39	3,539	2,509	27	7,190

Notes: Sample includes all normal active funds with non-negative member numbers and administrative expenses. All Rand values expressed in constant 2016 Rands.

3. ESTIMATION OF ECONOMIES OF SCALE

3.1. Methodology

We estimate the effect of fund size on administrative costs using a translog function and controlling for other potential determinants of administrative expenses:

$$ln(Cost_{it}) = \beta_0 + \beta_1 ln(Members_{it}) + \gamma X_{it} + \delta_t + \epsilon_{it} \quad (1)$$

where $Cost_{it}$ is fund *i*'s administrative expenses in year *t* and $Members_{it}$ is the total number of fund members. X_{it} contains a set of additional fund characteristics that may affect administrative costs - fund subtype dummies (preservation or umbrella, with ordinary as the reference category), fund class dummies (provident or retirement

annuity, with pension as the reference category), benefit structure dummies (defined benefit or hybrid, with defined contribution as the reference category), assets per member, percentage deferred members, percentage pensioners, percentage beneficiaries and percentage unclaimed benefits. When underwritten funds are included in the sample, an indicator for underwritten is also included in X_{it}. The δ_t are a full set of year dummies to flexibly control for time trends. The specification in equation (1) is identical to that in Touna Mama, Pillay, and Fedderke (2011).

We use the log of administrative costs and number of members to reduce the impact of heteroskedasticity and to enable the measurement of scale economies. The coefficient β_1 measures the cost elasticity and reflects economies of scale (indicated by $\beta_1 < 1$) or diseconomies of scale (indicated by $\beta_1 > 1$).[4] A null hypothesis of $\beta_1 = 1$ is equivalent to the hypothesis that administrative expenses rise proportionally with fund size, i.e. there are neither economies nor diseconomies of scale. Thus, in all results we present the t-statistic from a hypothesis test that $\beta_1 = 1$.

Standard errors are clustered at the pension fund level throughout.

3.2. Estimates of economies of scale

Table 3 gives the results of estimating equation (1) for the sample excluding underwritten funds in Columns (1)-(3), and including underwritten funds in Columns (4)-(6). Column (1) of **Table 3** replicates the main estimate in Touna Mama, Pillay, and Fedderke (2011) and our estimate of 0.705 is very close to their estimate of 0.697, and the small difference could be due to slight changes in the data. In Column (2) we estimate economies of scale over the more recent period 2007-2018, and it is evident that the cost elasticity has increased somewhat in the latter period relative to the earlier period - the scale coefficient β_1 increases from 0.705 over 1996-2006 (**Table 3** Column (1) to 0.731 over 2007-2018 (**Table 3** Column (2). Over all years, the estimate of the cost elasticity is 0.715 (**Table 3** Column (3).

Columns (4)-(6) of **Table 3** include underwritten funds, which were excluded in Touna Mama, Pillay, and Fedderke (2011) because they are only reported in the dataset from 2005 onwards. Including underwritten funds does not change the estimates of the cost elasticity much, and the estimates are slightly larger in two of the three cases.

In all the estimates, the scale coefficient β_1 of the number of members is significantly different from the constant returns-to-scale value of 1. There are strong and significant economies of scale in the South African retirement fund industry - total administrative costs increase by only 72% when membership doubles (**Table 3** Column (6). This is equivalent to 28% potential economies of scale.

The estimated scale coefficient is similar to that estimated for the Netherlands (64% by Bikker and De Dreu (2009), and 69% by Bikker, Steenbeek, and Torracchi (2012) and Australia (74% by Bikker, Steenbeek, and Torracchi (2012). The South African retirement fund industry thus has similar economies of scale to the Dutch and Australian industries. On the other hand, the estimated scale coefficient is much smaller than Bikker, Steenbeek, and Torracchi (2012) estimate for the United States (0.79) and Canada (0.95, and not statistically significantly different from 1). South African retirement funds are not as efficient as those in the US and Canada. In particular, Canadian retirement funds are operating on an efficient scale.

Looking at fund characteristics, we see that underwritten funds have lower administrative costs than private funds. Preservation funds have significantly higher administrative costs than ordinary funds. Over 1996-2006, umbrella funds had significantly lower administrative costs than ordinary funds but this difference is no longer there over 2007-2018 and when looking over the entire sample period. Since more than one employer can participate in an umbrella fund, we might expect umbrella funds to have lower administrative costs but this does not appear to be true in all sample periods. There does not appear to be a significant difference in administrative costs between pension and provident funds. Some of the coefficient estimates for retirement annuity funds are statistically significant, indicating that retirement annuity funds may have higher administrative costs than pension funds. This may be because retirement annuity funds collect contributions by directly debiting members 'bank accounts and this is likely to be more expensive than the payroll deductions used by pension and provident funds. Both defined benefit and hybrid funds have significantly higher administrative costs than defined contribution funds.

The results in **Table 3** suggest that the cost elasticity over the period 2007-2018 is higher than over the earlier period 1996-2006. In order to examine this further, **Figure 3** illustrates the scale coefficients when equation (1) is

[4] Note that economies of scale are equal to 1 minus the cost elasticity.

estimated separately for each year. We exclude underwritten funds in these estimations since they are only reported in the data from 2005 onwards, but the results including underwritten funds are very similar.

Looking at **Figure 3**, we can see that the cost elasticity was indeed falling over the period 1996 to 2006 and then increases slightly over the years 2007 to 2018. In 2018, the estimated cost elasticity is 0.74 which is equivalent to 26% potential economies of scale. In all years, the scale coefficient is statistically significantly different from the constant returns-to-scale value of 1.

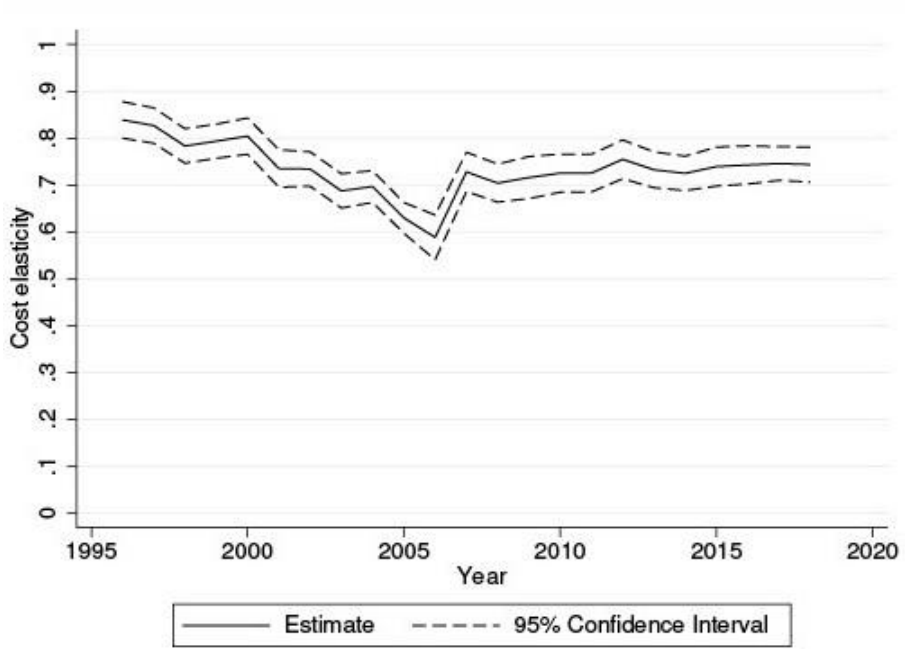
Table 3: Estimates of economies of scale using linear specification

	Excluding underwritten funds			All funds		
	1996-2006	2007-2018	All years	1996-2006	2007-2018	All years
	(1)	(2)	(3)	(4)	(5)	(6)
Total members (log)	0.705***	0.731***	0.715***	0.701***	0.736***	0.719***
	(0.014)	(0.015)	(0.013)	(0.013)	(0.014)	(0.012)
Underwritten				-0.699***	-0.328***	-0.487***
				(0.053)	(0.077)	(0.057)
Preservation	0.898***	0.574***	0.632***	0.844***	0.511***	0.578***
	(0.175)	(0.140)	(0.129)	(0.168)	(0.130)	(0.120)
Umbrella	-0.183**	0.018	-0.018	-0.170**	0.044	0.010
	(0.074)	(0.066)	(0.054)	(0.072)	(0.063)	(0.052)
Provident	-0.062	0.062	-0.002	-0.063	0.037	-0.017
	(0.047)	(0.065)	(0.047)	(0.042)	(0.061)	(0.043)
Retirement annuity	0.335	0.391*	0.365*	0.278	0.314	0.304
	(0.235)	(0.222)	(0.203)	(0.231)	(0.208)	(0.192)
Defined benefit	0.255***	0.334***	0.303***	0.282***	0.329***	0.329***
	(0.062)	(0.127)	(0.068)	(0.060)	(0.109)	(0.063)
Hybrid	0.443***	0.350***	0.403***	0.466***	0.347***	0.421***
	(0.105)	(0.102)	(0.082)	(0.106)	(0.100)	(0.082)
Total assets per member (R10,000s)	0.001**	0.001***	0.001***	0.001**	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Deferred members, percentage	-0.001	-0.006**	-0.004**	-0.011***	-0.006***	-0.010***
	(0.003)	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)
Pensioners, percentage	0.006***	0.003*	0.005***	0.006***	0.003*	0.005***
	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)
Beneficiaries, percentage	0.011***	0.007*	0.009***	0.009***	0.006*	0.008***
	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)	(0.002)
Unclaimed benefits, percentage	-0.002	-0.012***	-0.012***	-0.004	-0.013***	-0.013***
	(0.003)	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)
Constant	8.943***	8.959***	8.851***	8.979***	8.947***	8.843***
	(0.084)	(0.103)	(0.080)	(0.079)	(0.099)	(0.077)
t-statistic: $\beta_1 = 1$	-21.468***	-17.740***	-22.556***	-23.913***	-18.896***	-24.147***

	Excluding underwritten funds			All funds		
	1996-2006	2007-2018	All years	1996-2006	2007-2018	All years
Number of observations	13,652	12,853	26,505	15,408	14,515	29,923
R-squared	0.626	0.646	0.642	0.689	0.669	0.688

*Notes: Sample includes all normal active funds with non-negative member numbers and administrative expenses. Columns (1)-(3) exclude underwritten funds while Columns (4)-(6) includes them. All estimates include a full set of year dummies in addition to the variables shown in the table. Clustered standard errors are in parentheses. *** significant at the 1% level, ** at the 5% level, * at the 10% level.*

Figure 3: Estimates of cost elasticity by year, 1996-2018



Notes: Sample includes all normal active funds with non-negative member numbers and administrative expenses. Underwritten funds are excluded.

3.3. What is the optimal fund size?

In order to determine the optimal fund size, we estimate a specification that allows economies of scale to vary with fund size by introducing a squared membership term.

$$ln(Cost_{it}) = \beta_0 + \beta_1 ln(Members_{it}) + \beta_2 [ln(Members_{it})]^2 + \gamma X_{it} + \delta_t + \epsilon_{it} \quad (2)$$

In this specification, the cost elasticity now depends on the fund size and is given by $\beta_1 + 2\beta_2 ln(Members_{it})$. This specification is useful to determine if larger funds have larger cost elasticities and to ascertain the optimal fund size.

Table 4 gives the results of estimating equation (2) for the full sample including underwritten funds in Columns (1)-(3), and for the sample of 23-year funds only in Columns (4)-(6). The 23-year funds in particular might be more useful for determining the optimal fund size since they represent the sample of funds who have survived entry and competition and therefore might better reflect efficiency in the industry.

Looking at all funds in Columns (1)-(3) of **Table 4**, the statistical significance of the quadratic terms indicates that the cost elasticity is not constant and economies of scale decrease as fund size increases. Although the quadratic term is statistically significant, the actual effect is not very large. For example, the cost elasticity at the average fund size of 5,000 members is 0.78 and the cost elasticity at 47,000 members (roughly a one standard deviation increase from the average) is 0.84. Thus, the actual effect of larger fund size on the cost elasticity is relatively small.

A similar result is observed when looking at only the 23-year funds in Columns (4)-(6). Here, the quadratic term is insignificant except for over they years 2007-2018. For the 23-year funds, there is no effect of fund size on cost elasticity over the years 1996-2006 and over the full sample period. We can use the estimates in **Table 4** to determine the optimal fund size. When the cost elasticity is equal to 1, there is constant returns to scale and the fund has reached its optimal size. Based on the estimates for the full sample (Column (3) of **Table 4**), the optimal fund size is just under 21 million members. However, 21 million far exceeds the sample maximum fund size of 1.6 million members, as well as the sample total number of members of 13 million in 2018. Thus, this estimate is of limited usefulness and we instead look at the 23-year funds to determine the optimal fund size. Based on the estimates for the 23-year funds over the period 2007-2018, the optimal fund size is 300,000 members. This is larger than the optimal fund size of 220,000 members estimated by Touna Mama, Pillay, and Fedderke (2011) for the 11-year funds over 1996-2006.[5]

Table 4: Estimates of economies of scale using quadratic specification

	All funds			23 year funds		
	1996-2006	2007-2018	All years	1996-2006	2007-2018	All years
	(1)	(2)	(3)	(4)	(5)	(6)
Total members (log)	0.521***	0.615***	0.562***	0.887***	0.319*	0.492***
	(0.047)	(0.061)	(0.045)	(0.218)	(0.186)	(0.189)
Total members (log), squared	0.016***	0.009*	0.013***	-0.005	0.027**	0.018
	(0.004)	(0.005)	(0.004)	(0.015)	(0.012)	(0.012)
Underwritten	-0.749***	-0.351***	-0.528***	0.228*	1.541***	0.854***
	(0.055)	(0.076)	(0.057)			
Preservation	0.805***	0.494***	0.545***			
	(0.169)	(0.132)	(0.121)	(0.116)	(0.115)	(0.108)
Umbrella	-0.181**	0.028	-0.021	-0.098	0.108	0.040
	(0.072)	(0.064)	(0.053)	(0.190)	(0.083)	(0.086)
Provident	-0.069*	0.037	-0.022	-0.158	0.086	-0.036
	(0.042)	(0.060)	(0.043)	(0.122)	(0.112)	(0.109)
Retirement annuity	0.287	0.275	0.251	-0.140	0.015	-0.052
	(0.234)	(0.209)	(0.194)	(0.429)	(0.596)	(0.522)
Defined benefit	0.283***	0.315***	0.318***	0.145	0.099	0.074
	(0.059)	(0.108)	(0.061)	(0.099)	(0.110)	(0.083)
Hybrid	0.457***	0.344***	0.414***	0.341*	0.211	0.215
	(0.103)	(0.098)	(0.079)	(0.173)	(0.163)	(0.141)
Total assets per member (R10,000s)	0.001**	0.001***	0.001***	0.010***	0.002***	0.004***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)

[5] Touna Mama, Pillay, and Fedderke (2011) cover the years 1996-2006 and so use a sample of 11-year funds that represents those funds that appear in every year in their dataset.

	All funds			23 year funds		
	1996-2006	2007-2018	All years	1996-2006	2007-2018	All years
	(1)	(2)	(3)	(4)	(5)	(6)
Deferred members, percentage	-0.012***	-0.007***	-0.012***	-0.006**	-0.002	-0.003
	(0.001)	(0.002)	(0.001)	(0.003)	(0.005)	(0.004)
Pensioners, percentage	0.006***	0.003*	0.005***	-0.003	0.005***	0.005**
	(0.001)	(0.002)	(0.001)	(0.003)	(0.002)	(0.002)
Beneficiaries, percentage	0.008***	0.006*	0.008***	0.010*	0.011***	0.014***
	(0.003)	(0.003)	(0.002)	(0.005)	(0.003)	(0.003)
Unclaimed benefits, percentage	-0.006*	-0.013***	-0.013***	-0.012**	-0.008***	-0.007***
	(0.003)	(0.001)	(0.001)	(0.006)	(0.002)	(0.002)
Constant	9.434***	9.337***	9.289***	7.929***	10.406***	9.569***
	(0.145)	(0.208)	(0.147)	(0.776)	(0.714)	(0.694)
Number of observations	15,408	14,515	29,923	2,134	2,328	4,462
R-squared	0.691	0.670	0.689	0.747	0.785	0.745

*Notes: Sample includes all normal active funds with non-negative member numbers and administrative expenses. Underwritten funds are included in the sample of all funds in Columns (1)-(3). Columns (4)-(6) contain only the 23-year funds and there are no underwritten funds among this sample. All estimates include a full set of year dummies in addition to the variables shown in the table. Clustered standard errors are in parentheses. *** significant at the 1% level, ** at the 5% level, * at the 10% level.*

Overall, we interpret the evidence in this section as indicative that economies of scale do not meaningfully vary with fund size.[6] The exception is for 23-year funds over 2007-2018 where the quadratic term is significant and indicates an optimal fund size of 300,000.

3.4. Do economies of scale vary with fund age?

In order to test whether older funds have a larger cost elasticity, we estimate the following specification:

$$ln(Cost_{it}) = \beta_0 + \beta_1 ln(Members_{it}) + \beta_2[ln(Members_{it}) \times FundAge_{it}] + \beta_3 FundAge_{it} + \gamma X_{it} + \delta_t + \epsilon_{it} \quad (3)$$

where $FundAge_{it}$ represents the age of fund i in year t and is calculated as the number of years the fund appears in the dataset. This specification allows us to test whether the cost elasticity depends on the age of the fund by examining β_2. **Table 5** gives the results of estimating equation (3) on the sample excluding underwritten funds in Panel A and for all funds (including underwritten funds) in Panel B.

Table 5: Economies of scale and fund age

	Total members (log)		Total members (log) X Fund age		Fund age		N
	(1)		(2)		(3)		(4)
Panel A: Excl underwritten funds							
1996-2006	0.765***	(0.018)	-0.013***	(0.003)	0.103***	(0.016)	13,652

[6] The quadratic term is also not statistically significant in the fixed effects estimates (results not shown).

	Total members (log)		Total members (log) X Fund age		Fund age		N
	(1)		(2)		(3)		(4)
Panel A: Excl underwritten funds							
2007-2018	0.744***	(0.027)	-0.002	(0.002)	0.041***	(0.014)	12,853
All years	0.731***	(0.014)	-0.003**	(0.001)	0.047***	(0.010)	26,505
Panel B: All funds							
1996-2006	0.736***	(0.015)	-0.009***	(0.002)	0.083***	(0.016)	15,408
2007-2018	0.747***	(0.024)	-0.002	(0.002)	0.038***	(0.013)	14,515
All years	0.734***	(0.012)	-0.003**	(0.001)	0.047***	(0.010)	29,923
Panel C: 23 year funds							
1996-2006	0.818***	(0.031)					2,134
2007-2018	0.704***	(0.032)					2,328
All years	0.749***	(0.029)					4,462

*Notes: Sample includes all normal active funds with non-negative member numbers and administrative expenses. Underwritten funds are excluded in Panel A and included in Panel B. There are no underwritten funds among the 23-year funds in Panel C. All estimates include controls for fund subtype, fund class, benefit structure, assets per member, percentage deferred members, percentage pensioners, percentage beneficiaries, percentage unclaimed benefits, and a full set of year dummies. Clustered standard errors are in parentheses. *** significant at the 1% level, ** at the 5% level, * at the 10% level.*

Looking at Column (3) of **Table 5**, it is clear that older funds actually have higher administrative costs than younger funds and this is true in all sample periods and whether or not underwritten funds are included. For the full sample, a 1-year increase in fund age will increase administrative costs by 4.7% (Column (3) of Panel B, All years).

The coefficient on the interaction term [$ln(Members_{it})$ x $FundAge_{it}$] is given in Column (2). This coefficient is negative and statistically significant over the period 1996-2006, in both Panels A and B, indicating that older funds have lower cost elasticities than younger funds. This is equivalent to decreasing economies of scale as funds get older. However, over the later period 2007-2018, this effect is no longer statistically significant and is much smaller in magnitude. This suggests that the relationship between fund age and cost elasticity has weakened over time. Looking over all years, the interaction term is statistically significant but the magnitude of the effect is not large - a 23-year old fund will have a cost elasticity that is 0.066 percentage points lower than a 1-year old fund.

Panel C of **Table 5** examines the relationship between fund age and economies of scale from a different perspective by estimating equation (1) on the sample of funds that appear in the dataset in every year - the "23-year funds". These funds are likely quite different from the other funds since they have survived the entire sample period and represent the oldest funds in the dataset. For example, there are no underwritten funds among the 23-year funds. Over 1996-2006, these 23-year funds have a cost elasticity of 0.818 which is much higher than the 0.701 estimated for all funds over the same period in **Table 3**. Thus, over this period the 23-year funds are more efficient than other funds and this result matches the finding for 11-year funds in Touna Mama, Pillay, and Fedderke (2011).[7] However, this advantage of the 23-year funds is no longer present over 2007-2018 when these funds have a lower cost elasticity (0.704) than that estimated for all funds (0.736). Over the full sample period, the 23-year funds are slightly more efficient than other funds with a cost elasticity of 0.749 that is higher than the 0.719 estimated for all funds.

Overall, these results suggest that over the earlier years 1996-2006, older funds had significantly lower cost elasticities than younger funds and the 23-year funds were much more efficient compared to all funds. However, in the later years 2007-2018 these relationships change and fund age no longer affects the cost elasticity over this period and 23-year funds are actually slightly less efficient than all funds.

[7] Touna Mama, Pillay, and Fedderke (2011) cover the years 1996-2006 and so use a sample of 11-year funds that represents those funds that appear in every year in their dataset.

3.5. Do economies of scale vary with fund characteristics?

The results in Table 3 indicate that there are some differences in administrative costs across the fund characteristics. To test whether economies of scale vary by fund characteristic, we estimate the following specification:

$$ln(Cost_{it}) = \beta_0 + \sum_{j=1}^{3} \beta_{1j}[ln(Members_{it}) \times Char_j] + \sum_{j=1}^{3} \gamma_j[X_{it} \times Char_j] + \sum_{j=1}^{3}[\delta_t \times Char_j] + \epsilon_{it} \quad (4)$$

where each variable in equation (1) is interacted with a set of indicators for fund characteristics. The three fund characteristics examined are fund subtype, fund class and benefit structure and $Char_j$ takes on values that reflect the different categories under each characteristic. So for example, when examining fund subtype $Char_j$ is a set of dummies that indicate whether a fund is ordinary, preservation or umbrella. This specification allows us to compare economies of scale across different fund subtypes, classes and benefit structures.

Table 6 gives the results from estimating equation (6) on the sample of all funds over the full sample period. Panel A compares the cost elasticity across fund subtype, Panel B across fund class, and Panel C across benefit structure. The estimated cost elasticity is given in Column (1).

Panel A of **Table 6** reveals that preservation funds are the most efficient funds, followed by umbrella funds with ordinary funds being the least efficient. There are 30% potential economies of scale for ordinary funds and 24% potential economies of scale for preservation funds. The estimated scale coefficient is not significantly different from 1 for preservation funds (**Table 6** Panel A Column 2) indicating that preservation funds are operating at an efficient scale.

Comparing fund classes in Panel B, we see that there are 32% potential economies of scale for pension funds and 25% potential economies of scale for provident funds. However, retirement annuities are operating on an efficient scale since the estimated scale coefficient is not significantly different from 1 (**Table 6** Panel B Column 2).

Finally, Panel C indicates that hybrid funds are the most efficient, followed by defined contribution funds, and defined benefit funds are the least efficient. There are 19% potential economies of scale for hybrid funds, 28% for defined contribution funds, and 32% for defined benefit funds. None of the benefit structures are operating at an efficient scale.

Table 6: Economies of scale and fund characteristics

	t-stat:		
	β_1	$\beta_1 = 1$	N
	(1)	(2)	(3)
Panel A: Fund subtype			
Ordinary	0.695***	-23.148***	23,485
	(0.013)		
Preservation	0.990***	-0.305	1,099
	(0.034)		
Umbrella	0.764***	-11.822***	5,339
	(0.020)		
Panel B: Fund class			
Pension	0.683***	-18.550***	15,027
	(0.017)		
Provident	0.754***	-19.437***	14,305
	(0.013)		
RA	0.910***	-0.973	591
	(0.092)		
Panel C: Benefit structure			
DB	0.681***	-13.843***	4,295
	(0.023)		
DC	0.722***	-22.724***	24,877
	(0.012)		
Hybrid	0.808***	-6.043***	751
	(0.032)		

*Notes: Column (1) gives the estimate of the cost elasticity, β1, Column (2) gives the t-statistic from a test that β2 = 1, and Column (3) gives the number of observations. Sample includes all normal active funds with non-negative member numbers and administrative expenses. Underwritten funds are included in all estimates. All estimates include controls for fund subtype, fund class, benefit structure, assets per member, percentage deferred members, percentage pensioners, percentage beneficiaries, percentage unclaimed benefits, and a full set of year dummies. Clustered standard errors are in parentheses. *** significant at the 1% level, ** at the 5% level, * at the 10% level.*

This section has revealed that there are differences in efficiency across fund subtype, fund class and benefit structure. In particular, preservation funds and retirement annuities are operating at an efficient scale although these represent the smallest categories of funds in terms of numbers.

3.6. Do economies of scale vary across administrative cost categories?

The results in **Table 3** indicated that there are strong and significant economies of scale in the South African retirement fund industry - total administrative costs increase by only 72% when membership doubles, which is

equivalent to 28% potential economies of scale. In this section, we examine economies of scale separately for each category of administrative costs by estimating equation (1) separately for each administrative cost category.

Table 7 shows the estimated scale coefficient β_1 for each of the 17 categories of administrative costs estimated over the sample of all funds over all years. The number of observations (Column (3) differs for each category because we discard negative values for each category of administrative costs.

Table 7: Economies of scale by category of administrative cost

	t-stat:		
	β_1	$\beta_1 = 1$	N
	(1)	(2)	(3)
Actuarial fees	0.510***	-11.879***	29,875
	(0.041)		
Admin fees	0.753***	-6.361***	29,874
	(0.039)		
Audit fees	0.518***	-14.794***	29,780
	(0.033)		
Consultancy fees	0.660***	-8.240***	29,876
	(0.041)		
Depreciation at cost	0.201***	-25.311***	29,918
	(0.032)		
Depreciation at valuation	0.016***	-238.502***	29,923
	(0.004)		
Fidelity cover	0.210***	-24.587***	29,843
	(0.032)		
Levies	0.126***	-24.865***	29,842
	(0.035)		
Other	0.776***	-8.832***	29,711
	(0.025)		
Office expenses	0.309***	-23.901***	29,891
	(0.029)		
Operating lease payments	0.046***	-83.853***	29,920
	(0.011)		
Penalties	0.005***	-369.018***	29,913
	(0.003)		
Principal officer	0.407***	-18.071***	29,918
	(0.033)		

	t-stat:		
	β_1	$\beta_1 = 1$	N
Staff expenses	0.309***	-16.271***	29,919
	(0.042)		
Secretarial fees	0.050***	-73.291***	29,914
	(0.013)		
Trustee fees	0.679***	-10.634***	29,912
	(0.030)		
Amount allocated to UB	0.141***	-54.427***	29,917
	(0.016)		

*Notes: Column (1) gives the estimate of the cost elasticity, β1, Column (2) gives the t-statistic from a test that β2 = 1, and Column (3) gives the number of observations. Sample includes all normal active funds with non-negative member numbers and administrative expenses. Underwritten funds are included in all estimates. All estimates include controls for fund subtype, fund class, benefit structure, assets per member, percentage deferred members, percentage pensioners, percentage beneficiaries, percentage unclaimed benefits, and a full set of year dummies. Clustered standard errors are in parentheses. *** significant at the 1% level, ** at the 5% level, * at the 10% level.*

The results in **Table 7** indicate that all of the estimated cost elasticities are significantly different from 1 for the administrative cost categories (Column (2). This indicates that there are significant potential economies of scale available across all administrative cost categories. However, the extent of unused economies of scale differs across the administrative cost categories. For example, there are 25% potential economies of scale for admin fees but almost 100% potential economies of scale for penalties.

Ranking the administrative cost categories from most to least efficient we have:

1) Other (22% potential economies of scale)
2) Admin fees (25%)
3) Trustee fees (32%)
4) Consultancy fees (34%)
5) Audit fees (48%)
6) Actuarial fees (49%)
7) Principal officer (59%)
8) Staff expenses (69%)
9) Office expenses (69%)
10) Fidelity cover (79%)
11) Depreciation at cost (80%)
12) Amount allocated to UB (86%)
13) Levies (87%)
14) Secretarial fees (95%)
15) Operating lease payments (95%)
16) Depreciation at valuation (98%)
17) Penalties (99%)

This list provides an indication of the more and less efficient administrative cost categories, and shows where the largest unused scale economies lie. This might be helpful in determining which specific costs to focus on in order to try to increase efficiency.

3.7. Robustness check: fixed effects specification

One concern with the ordinary least squares (OLS) specification in (1) is that there may be unobserved fund characteristics that affect both fund size and administrative costs, such as organisational structure or operational efficiencies, which would result in bias in the OLS estimation. In order to address these concerns, we estimate the following regression that includes pension fund fixed effects with the α_i:

$$ln(Cost_{it}) = \beta_0 + \beta_1 ln(Members_{it}) + \gamma X_{it} + \delta_t + \alpha_i + \epsilon_{it} \quad (5)$$

where all the other variables are defined as in equation (1), except that the fund fixed effects also absorb fund characteristics that do not vary over time and which appear in the OLS specification - fund subtype dummies (ordinary, preservation or umbrella), fund class dummies (pension, provident or retirement annuity), and benefit structure dummies (defined contribution, defined benefit or hybrid).

The advantage of the fixed effects estimation is that it addresses concerns about omitted variable bias that may be present in the OLS estimation. Further, the fixed effects specification exploits the variation within funds and allows us to estimate the average effect of fund size changes on costs within funds. However, one concern is that the fixed effects specification wipes out the effect of fund size and thereby causes a downward bias in the estimates of economies of scale (Bikker, Steenbeek, and Torracchi 2012).

Table 8 gives the results of estimating the fund fixed effects specification in equation (5) on the sample excluding underwritten funds in Columns (1)-(3), and including underwritten funds in Columns (4)-(6). The estimated scale coefficients in **Table 8** are all smaller than those estimated using OLS in **Table 3**, which could be due to the downward bias caused by the fund fixed effects mopping up the effect of fund size.

However, the broad conclusions of the main results are confirmed by the fund fixed effects estimation. The scale coefficient is greater over the later period 2007- 2018 than over the earlier period 1996-2006, suggesting that funds have become more efficient over time. In all periods and samples, the scale coefficient is statistically significantly different from 1 indicating that retirement funds are not operating at an efficient scale.

Table 8: Estimates of economies of scale using fund fixed effects specification

	Excluding underwritten funds			All funds		
	1996-2006	2007-2018	All years	1996-2006	2007-2018	All years
	(1)	(2)	(3)	(4)	(5)	(6)
Total members (log)	0.592***	0.680***	0.645***	0.587***	0.707***	0.657***
	(0.037)	(0.031)	(0.022)	(0.036)	(0.029)	(0.021)
Total assets per member (R10,000s)	0.000***	0.001***	0.000***	0.000***	0.001***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Deferred members, percentage	-0.004***	-0.009**	-0.007***	-0.004**	-0.008**	-0.006***
	(0.002)	(0.004)	(0.002)	(0.002)	(0.003)	(0.002)
Pensioners, percentage	-0.005***	0.004*	-0.002	-0.005***	0.003	-0.002
	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)
Beneficiaries, percentage	0.003	-0.002	-0.000	0.003	-0.001	-0.001
	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)
Unclaimed benefits, percentage	-0.006**	-0.010***	-0.010***	-0.006**	-0.011***	-0.011***
	(0.003)	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)
Constant	9.673***	9.392***	9.378***	9.565***	9.189***	9.223***
	(0.214)	(0.209)	(0.144)	(0.204)	(0.194)	(0.134)
t-statistic: $\beta_1 = 1$	-11.143***	-10.352***	-16.120***	-11.396***	-10.050***	-16.365***
Number of observations	13,652	12,853	26,505	15,408	14,515	29,923
R-squared	0.273	0.354	0.321	0.264	0.358	0.319

*Notes: Sample includes all normal active funds with non-negative member numbers and administrative expenses. Columns (1)-(3) exclude underwritten funds while Columns (4)-(6) includes them. All estimates include fund fixed effects and a full set of year dummies in addition to the variables shown in the table. Clustered standard errors are in parentheses. *** significant at the 1% level, ** at the 5% level, * at the 10% level.*

4. RECOMMENDATIONS ON FUND ADJUSTMENTS AND CONSOLIDATION

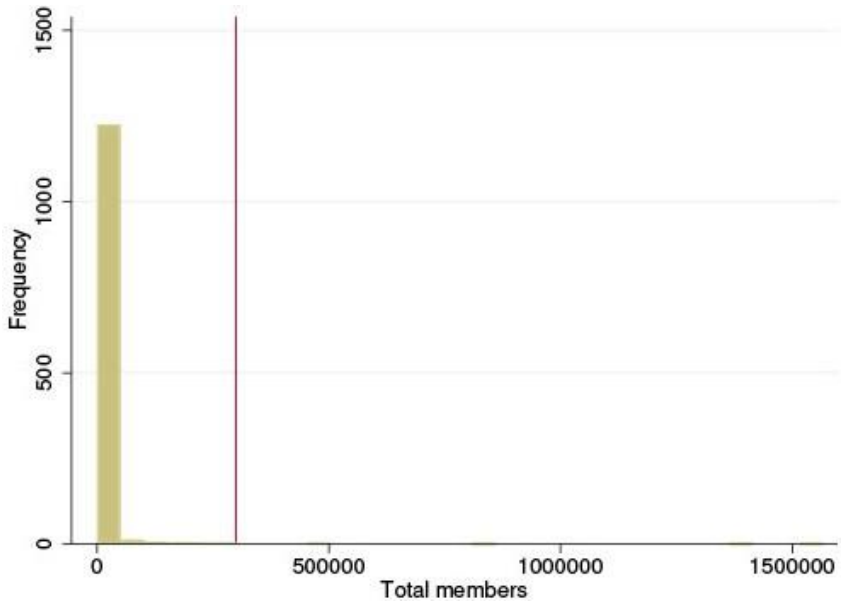
The results in Section **3.2** indicate that the South African retirement fund industry is not operating at an efficient scale since the estimated scale coefficients are significantly different from 1. There is thus scope to improve efficiency in the industry. Looking at the trend over time, we see that the scale coefficient has been increasing slightly over the years 2007-2018 indicating that there has been movement toward greater efficiency. Nevertheless, in 2018 the estimated cost elasticity is 0.74 which is equivalent to 26% potential economies of scale. Increasing the operational scale of retirement funds can lower average administrative costs and thereby benefit fund members.

While the results in Section **3.3** generally indicate that economies of scale do not vary with fund size, there is an exception when looking at the 23-year funds over the period 2007-2018. The results show that over this period the optimal fund size is 300,000 members. **Figure 4** shows the histogram of fund size in 2018, with a vertical line to indicate the estimated optimal fund size of 300,000 members. It is evident that most funds lie below this optimal size and 0.4% of funds are actually above the optimal fund size. This suggests that some funds might be operating at diseconomies of scale while most funds have potential economies of scale available.

The differential analyses by fund characteristics and administrative cost categories can provide some guidance on where the greatest potential economies of scale lie. The analysis by fund characteristics in Section **3.5** reveals that preservation fund and retirement annuities are operating at an efficient scale, although there are relatively few funds of these types. On the other hand, ordinary funds and pension funds have the lowest estimated cost

elasticities and thus the greatest potential economies of scale. There is no benefit structure that is operating at an efficient scale although defined benefit funds have the greatest potential economies of scale. Section **3.6** shows that there is also great variation in economies of scale across the administrative cost categories with the five least efficient categories being penalties, depreciation at valuation, operating lease payments, secretarial fees, and levies.

Figure 4: Distribution of fund size, 2018



Notes: The vertical line indicates the optimal fund size of 300,000 estimated using 23-year funds over the period 2007-2018.

Thus, these results indicate that there are potential efficiency gains from increasing the operational scale of retirement funds. Further, the results suggest possible areas of focus in order to improve efficiency in the retirement fund industry. In particular, ordinary, umbrella, pension and provident funds are not operating at an efficient scale. Within total administrative costs, there are certain categories that are less efficient than others and thus have greater potential economies of scale.

These recommendations focus entirely on economies of scale and efficiency, but there might be other important considerations too. For example, smaller funds may offer greater levels of service and complexity that their members value.

5. ESTIMATES OF NSSF COSTS

The NSSF has been proposed to fill the gap in South Africa's social insurance system. The NSSF will complement social assistance programmes, social insurance funds and private arrangements and provide pensions to workers who reach retirement, disability benefits to those who are physically unable to work and survivor benefits to their dependents should they not live until retirement. Contributions to the pension and risk benefit components of the NSSF will be pooled, sharing risk across all contributors.

The retirement system is designed to have three tiers. Tier 1 are low-income workers earning below R13,000 a year whose retirement needs will be largely met by the social grant system. Tier 2 is the NSSF and the core of the mandatory system with workers contributing to the fund and receiving retirement income. Tier 3 is voluntary retirement savings made in addition to NSSF contributions to raise the income replacement rate for higher income workers.

Here, we provide an estimate of the administrative costs of the NSSF (Tier 2 of the proposed retirement system). These estimates should be treated with some caution because of the number of assumptions required and because

the structure of the NSSF is not finalised. We construct this estimate using the model specified in equation (1) and using the available information on the structure of the NSSF. The values used for each variable in the model, and the sources for the values, are discussed below.

5.1. Number of members

In a model where workers enroll in the NSSF as soon as they begin formal employment and remain members for life even if their contributions are not continuous, Pick and Simkins (2012) estimate that NSSF membership will eventually reach 80% of the adult population. The latest population estimates indicate that the adult population (i.e. those 25 years and older) is 32,973,449 (Statistics South Africa (StatsSA) 2020). Thus, we use 0.8 32, 973, 449 = 26, 378, 759 as the total number of NSSF members. Using 80% of the current population value implicitly assumes that we are estimating the costs for the NSSF as if it were a fully functional fund today.

This total number of members will be split between active members, pensioners, beneficiaries, deferred members and unclaimed benefits members. Only workers earning above R13,000 per year will be required to contribute to the NSSF (Pick and Simkins 2012), and so we use Quarterly Labour Force Survey (QLFS) 2017 Quarter 4 (Q4) data to estimate the number of contributors based on this income threshold. The data indicate that the estimated number of people whose annual income is more than R13,000 per year (in 2011 Rand) is 11,490,811 and we use this as our estimate of the number of the active members.[8] We are unable to determine how the remaining 56% of total members will be split between pensioners, beneficiaries, deferred members and unclaimed benefits members and so we allocate the remaining members between these categories in proportion to the sample averages for ordinary defined benefit pensions in our administrative dataset on private retirement funds. The sample averages in the administrative dataset provide an indication of the current membership structure for a typical retirement fund with a similar structure to that proposed for the NSSF, with the caveat that there is double counting of members in the dataset since an individual may belong to more than one type of fund although this is less likely to be a problem since we take the average only among a subset of funds.

5.2. Fund subtype

We consider the NSSF to be an ordinary fund. It is not a preservation fund that receives lump sum benefits from a pension or provident fund when a worker changes employer, nor is it an umbrella fund that serves many company funds under one structure. It is a large ordinary fund designed to provide pensions to all workers.

5.3. Fund class

The NSSF is a pension fund. It is not a provident fund that allows workers to take a lump sum cash withdrawal at retirement, nor is it a retirement annuity since both employers and employees will contribute.

5.4. Benefit structure

The NSSF is currently envisioned as a defined benefit fund, although its design is intended to yield an income in retirement similar to the average expected outcome of defined contribution funds (IDTT 2012). Thus, we treat the NSSF as a defined benefit plan.

5.5. Total assets per member

The NSSF should have at least a 25% minimum reserve requirement: accumulated funds (NSSF assets) should over the long-term never fall below 25% of the present value of accrued future benefits (NSSF liabilities) (IDTT 2012). Department of Social Development (DSD) (2010) estimate that the total assets required for the NSSF is R533,195,786,000 in 2006 Rands.[9] In order to be comparable to the other estimates used in our analysis, we inflate this estimate to 2016 Rands and scale it by our higher number of members to arrive at an estimated total assets per member of R121,073.54. We note that this Figure is lower than the sample average for other funds with a similar structure to the NSSF in our dataset, so this assumed asset level might be too low.

[8] This estimate of 11.5 million is equivalent to 35% of the adult population, which is similar to the eventual contribution base estimated by Pick and Simkins (2012).

[9] We combine their estimates for Tiers 2A and 2B under Scenario 2 since that most closely matches the current NSSF proposed structure.

We estimate the model specified in equation (1) on the sample excluding underwritten funds for the full sample period, 1996-2018. We also estimate the model on the sub-sample of 23-year funds as these represent the most stable funds and so might be particularly relevant for estimating the costs of the NSSF. We use the linear specification of equation (1) given the limited significance of the quadratic term in the models estimated in Section **3.3**. Using the coefficient estimates from these models and the assumptions discussed above we can estimate the total administrative costs for the NSSF as:

$$Cost = exp(\frac{\widehat{\sigma}^2}{2})exp(log(\widehat{Cost})) \quad (6)$$

where σ^2 is the estimator of the variance of, and *log*(*Cost*) is the predicted value for the log of administrative costs. The adjustment factor *exp*(2) is required to produce a consistent prediction.

Table 9 gives the estimates of the NSSF administrative costs under these assumptions. Column (1) presents the coefficient estimates for equation (1) using all normal active funds with non-negative member numbers and administrative expenses and excluding underwritten funds. Column (2) presents the coefficient estimates when the sample is further restricted to only the 23-year funds. Columns (2) and (4) provide the values used for each variable as discussed above. The percentages for deferred members, pensioners, beneficiaries and unclaimed benefits differ across Columns (2) and (4) since these are based on sample averages (see discussion above) while the values for the other variables are unchanged.

Table 9: Estimates of NSSF administrative costs

	All funds		23 year funds	
	Coeff est	Value	Coeff est	Value
	(1)	(2)	(3)	(4)
Total members (log)	0.715	17.088	0.749	17.088
Preservation	0.632	0.000	0.865	0.000
Umbrella	-0.018	0.000	0.060	0.000
Provident	-0.002	0.000	-0.065	0.000
Retirement annuity	0.365	0.000	-0.071	0.000
Defined benefit	0.303	1.000	0.076	1.000
Hybrid	0.403	0.000	0.260	0.000
Total assets per member (R10,000s)	0.001	12.107	0.004	12.107
Deferred members, percentage	-0.004	1.621	-0.003	2.006
Pensioners, percentage	0.005	42.205	0.004	38.564
Beneficiaries, percentage	0.009	4.623	0.014	4.647
Unclaimed benefits, percentage	-0.012	7.552	-0.007	10.783
NSSF Cost estimate	5.7×10^9		5.2×10^9	
NSSF Cost estimate 95% CI	[4.2 × 109, 7.2 × 109]		[1.9 × 109, 8.4 × 109]	

Notes: The estimates in Column (1) are from the sample of all normal active funds with non-negative member numbers and administrative expenses, excluding underwritten funds. The estimates in Column (3) further restrict the sample to only the 23-year funds. Columns (2) and (4) give the values for the variables used to produce the estimate of costs.

The estimate for the administrative costs of the NSSF based on the model using all funds is R5.7 billion, and using only the 23-year funds is R5.2 billion (in 2016 Rands). These estimates should be interpreted with caution since

they are based on a number of assumptions. Further, the estimates are derived from a model estimated on a sample of private retirement funds and it is possible that the NSSF may have a cost function than that estimated here since it will likely be a different fund to the typical retirement fund in our dataset. In this way, the prediction of the NSSF cost estimate is "out of sample". In addition, the cost functions estimated here do not explain all the variation in administrative costs with an R^2 of 64% for the model using all funds and 78% for the model using 23-year funds. Thus, there could be some variables that are not in our dataset but are important predictors of administrative costs.

The 95% confidence intervals around the NSSF cost estimates are fairly wide – from R4.2-R7.2 billion and R1.9-R8.4 billion. Department of Social Development (2010) produces an estimate for administrative costs of R6.7 billion,[10] which falls within our 95% confidence intervals and so our estimates are comparable.

6. CONCLUSION

The initial examination of the data shows that there have been significant changes in the retirement fund industry over the period 2006 to 2018. There has been a general decrease in the number of funds, an increase in the average fund size, and an increase in average administrative expenses per member. The analysis by fund type reveals that these general trends conceal some important differences across fund class and benefit structure. In particular, average administrative costs per member have actually decreased for preservation, provident, defined contribution and hybrid funds from 2006 to 2018. This suggests that there is likely to be a change in the economies of scale results originally found over 1996-2006 by Touna Mama, Pillay, and Fedderke (2011).

Indeed, we find that the cost elasticity has increased somewhat from 0.705 over 1996-2006 to 0.731 over 2007-2018. The cost elasticity was falling over the period 1996 to 2006 and then increases slightly over the years 2007 to 2018. In 2018, the estimated cost elasticity is 0.74 which is equivalent to 26% potential economies of scale.

Overall, the evidence indicates that economies of scale do not meaningfully vary with fund size, with the exception of 23-year funds over 2007-2018 where the quadratic term is significant and indicates an optimal fund size of 300,000. This is larger than the optimal fund size of 220,000 members estimated by Touna Mama, Pillay, and Fedderke (2011) for the 11-year funds over 1996-2006. In 2018, most funds have fewer than 300,000 members and 0.4% of funds are actually above this optimal fund size. This suggests that some funds might be operating at diseconomies of scale while most funds have potential economies of scale available.

We examined whether economies of scale vary with fund age, characteristics and across the administrative cost categories. The results suggest that over the earlier years 1996-2006, older funds had significantly lower cost elasticities than younger funds and the 23-year funds were much more efficient compared to all funds. However, in the later years 2007-2018 these relationships change and fund age no longer affects the cost elasticity over this period and 23-year funds are actually slightly less efficient than all funds. There are differences in efficiency across fund subtype, fund class and benefit structure. In particular, preservation funds and retirement annuities are operating at an efficient scale although these represent the smallest categories of funds in terms of numbers. There are significant potential economies of scale available across all administrative cost categories. However, the extent of unused economies of scale differs across the administrative cost categories. For example, there are 25% potential economies of scale for admin fees but almost 100% potential economies of scale for penalties.

Using our estimated cost function and assumptions about the structure of the NSSF we estimate a 95% confidence interval for the NSSF administrative costs of R1.9 to R8.4 billion (in 2016 Rands). These estimates should be interpreted with caution since they are based on a number of assumptions. Further, the estimates are derived from a model estimated on a sample of private retirement funds and it is possible that the NSSF may have a cost function than that estimated here since it will likely be a different fund to the typical retirement fund in our dataset. In this way, the prediction of the NSSF cost estimate is "out of sample". In addition, the cost functions estimated here do not explain all the variation in administrative costs with an R^2 of 78%. Thus, there could be some variables that are not in our dataset but are important predictors of administrative costs.

[10] The figure used from Department of Social Development (2010) combines their estimates for administrative costs for Tiers 2A and 2B under Scenario 2 (excluding asset management costs) and is inflated to 2016 Rands to be comparable to our estimate.

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Report 2

Actuarial Study of the Proposed National Social Security Fund



Author: ***Actuarial Services Unit, Social Protection Department, Geneva Decent Work Team / Country Office, Pretoria,***

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Date:	February 2021
Author:	Actuarial Services Unit, Social Protection Department, Geneva Decent Work Team / Country Office, Pretoria

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ABBREVIATIONS AND ACRONYMS

CPI	Consumer Price Index
DC	Development Cooperation
DSD	Department of Social Development
EIU	Economist Intelligence Unit
GAP	General Average Premium
GDP	Gross Domestic Product
GEPF	Government Employees Pension Fund
IMF	International Monetary Fund
IOM	International Organization for Migration
MYPE	Mid Year Population Estimates
NDP	National Development Plan
NEDLAC	National Economic Development and Labour Council
NSSF	National Social Security Fund
OECD	Organization for Economic Co-operation and Development
PAYG	Pay-As-You-Go
PVFB	Present Value of Future Benefits
PVFS	Present Value of Future Salaries
QES	Quarterly Employment Statistics
QLFS	Quarterly Labour Force Survey
RMS	Rapid Mortality Surveillance Report
SARB	South African Reserve Bank
SASSA	South African Social Security Agency
StatsSA	Statistics South Africa
TFR	Total Fertility Rate
UIF	Unemployment Insurance Fund
VR	Vital Registration
WPP	World Population Prospects

1. INTRODUCTION

The Government of South Africa is in the process of reforming its social security system. The National Development Plan (NDP) dedicated a chapter to social protection. Following this, the Government elevated the reform agenda into a specific outcome in terms of the Medium-Term Strategic Framework 2014-2019. The Minister of Social Development was tasked with leading the coordination of Outcome 13: "An inclusive and responsive Social Protection system." In 2015, the Ministerial Committee on the Review of the Implementation of the White Paper for Social Welfare (1997), led by the former Commissioner responsible for Social Security in the National Planning Commission, recommended Cabinet to adopt the proposals on comprehensive social security.

In June 2016, Cabinet endorsed these recommendations and the comprehensive social security reform discussion paper tabled at the National Economic Development and Labour Council (NEDLAC) in November 2016. This has enabled social partners (Government, organized Labour, Business and Community) to engage on the identified gaps and recommendations.

According to the discussion paper, "the most notable gap in the social security system is the absence of a public fund that provides pensions and life insurance to the workforce as a whole. A large number of private occupational and voluntary schemes have been established to fill this gap, but some 6.2 million formal sector workers, including low-income earners, are excluded from such arrangements". The principal reform proposal is therefore the establishment of a National Social Security Fund (NSSF), which will be financed by contributions from all workers and employers and will pay pensions, disability and survivor benefits, and unemployment benefits.

The comprehensive social security reform includes the expansion of coverage of social security, including extended coverage under current schemes but also increase in tax-financed social protection for non-covered population, for example through the planned and on-going universalization of the old age pension consolidating pillar 0 of social security. The plan includes the harmonization of benefits and proposals for financing of schemes and a development of an occupational and voluntary tier with higher level of benefits.

The Department of Social Development (DSD) requested the International Labour Ogranization (ILO) to provide technical assistance support to further refinement to the design of the model of social security reform including actuarial valuation of the options for the NSSF and provide advice on its regulation, institutionalization and delivery mechanism. This will assist in the consultations with social partners in NEDLAC, as well as building and strengthening capacity in Government and design the implementation plans for the comprehensive social security reform.

The ILO will therefore contribute to the comprehensive social security reform programme, supporting the outputs of the national social dialogue through the NEDLAC, recommending improvements of the social security system; thereafter will assist with preparing submissions of draft policy, regulations and implementation plan to Cabinet. This will include recommendations of appropriate measure for achieving a better, sustainable and efficient social security system.

The three main outcomes of the development cooperation (DC) project are:

1) Increase knowledge and capacity of Government and social partners to engage in social dialogue on gender sensitive comprehensive social security reform
2) Improved institutional, administrative and regulatory framework of the National Social Security Fund
3) Support to the drafting of the proposed bill and an operationalization plan

In June 2018, a document prepared by the ILO was shared and discussed with DSD which presents the planed outputs and main activities to achieve the first outcome of the DC project as well as a list of data and information required for the actuarial valuation of the different reform options.

This report has been produced based on the information and data received from DSD. It should not be interpreted as a final version of the actuarial valuation of the future NSSF. It should be interpreted as one component of a work in progress where the final results will be based on discussions between stakeholders. It is the first report presenting actuarial estimates as part of the cooperation. The reader is invited to consult two other documents to better understand the context and the scenarios which are considered in this actuarial study:

- Design of the new NSSF in South Africa, July 2020
- South Africa, funding policy of the NSSF, July 2020

The Chapter 2 of this report presents the demographic an economic environment that have been used to undertake this actuarial study. In the Chapter 3, the data and assumptions pertaining to the future NSSF are presented and discussed. Chapter 4 presents the results of the actuarial study while Chapter 5 displays many sensitivity analyses to better understand the risks and the stakes that will face the new pension plan. A brief conclusion is presented in Chapter 6.

2. PROJECTED DEMOGRAPHIC AND MACROECONOMIC ENVIRONMENT OF SOUTH AFRICA

A social security pension scheme is one of the socio-economic and political systems which function within an environment of national economy. Therefore, it does not function independently of the demographic and economic context. The analysis of the various demographic and macroeconomic indicators is thus an important part of the actuarial valuation process of a social security system.

This chapter discusses the development of the main demographic and economic indicators of South Africa. It presents the general demographic and economic experience in South Africa along with demographic and economic projections up to year 2100.

The demographic and economic assumptions have been projected to year 2100 in order to appropriately measure the demographic and financial evolution of the scheme over the long-term. Such a long period of projection not only allows conclusions regarding the long-term sustainability of the scheme to be better drawn, but also contributes to providing a clearer picture of the scheme's sensitivity to assumptions or changes to benefits.

This section also addresses the impact of the COVID-19 crisis on the projections. It is important to keep in mind that, due to the very long-term nature of the projections, short-term[11] variations, like the COVID-19 crisis, will not affect considerably the long-term outlook of a not yet born social security pension scheme. It is also important to remind that the future will always be shaped through short-term variations, the COVID-19 crisis is not the first one and will not be the last one. The fact that NSSF is not yet implemented, diminishes considerably the impact of the crisis on the scheme. That said, we must not misrepresent the importance of the crisis, and that is why sensitivity analyses will be conducted in the actuarial valuation process. Our basic assumption is that, in 2022, the year of implementation of the new NSSF, the impact of the COVID-19 crisis on the macro-economic indicators will be over and that pre COVID-19 indexes may be used to undertake the projection and the analysis.

2.1. Population of South Africa

With the information available on the COVID-19, it is too early to know if vaccines are going to be found and what are going to be their efficiencies. So, it is difficult to project the impact of the COVID-19 crisis on the mortality experience. In the short-term, even if the elderly are going to be more impacted than younger one, it will not affect the projection because the scheme is young and there are no old-age pensioners. It is possible that variable like fertility rate may fluctuate in the short term, but currently, the COVID-19 is not affecting our short-term and long-term views on the new pension scheme. It is more on migration side that the impact may be more important, but, as it is discussed in the introduction of this section, we make the assumption that the situation is back to the pre COVID-19 crisis in 2022.

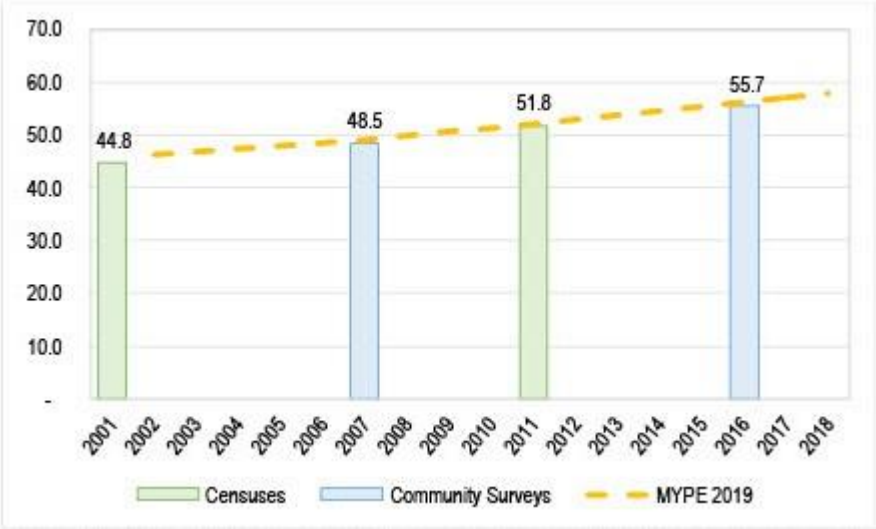
This section presents the recent demographic development observed in South Africa. It is mainly based on the censuses, community surveys and other studies produced by Statistics South Africa (StatsSA). Where appropriate, other internal or external sources of statistics are presented.

StatsSA conducts a population census every 10 years, with the last one being conducted in 2011. Since 2007, a community survey is also produced between each census to close the 10-year gap between two censuses.

Figure 1 presents the evolution of the total population since the Census of 2001.

[11] For actuarial projections of social insurance schemes, short-term is usually defined as less than 10 years.

Figure 1: Evolution of the total population in South Africa (in million)

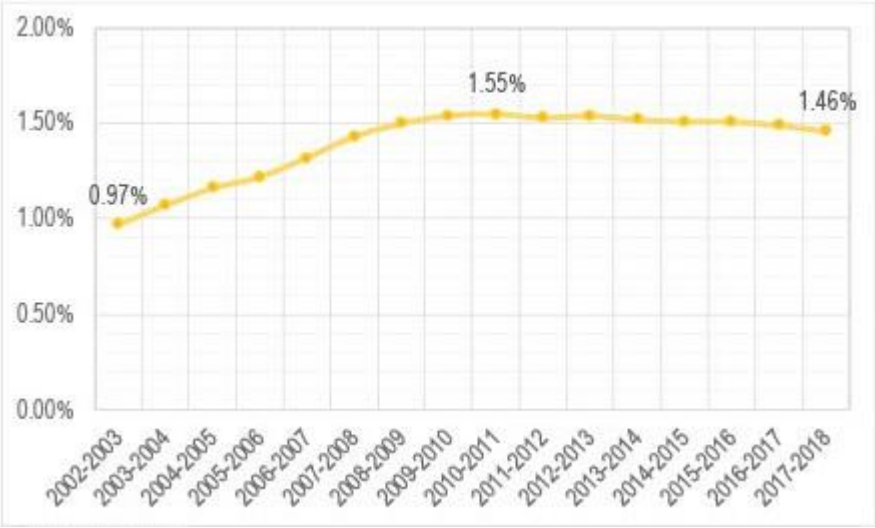


Source: Census 2001, Community Survey 2007, Census 2011, Community Survey 2016 and MYPE 2019

According to the recent censuses and community surveys, the total population in South Africa increased from 44.8 million in 2001 to 48.5 million in 2007, 51.8 million in 2011 and 55.7 million in 2016. The population increased annually by an average rate of 1.3 per cent between 2001 and 2007, 1.6 percent between 2007 and 2011, and 1.5 per cent between 2011 and 2016. According to the Mid-Year Population Estimates (MYPE) of 2019, the total population of the country reached approximately 57.9 million[12] in 2018.

Figure 2 presents the annual growth rate of the total population from 2002- 2003 to 2017-2018.

Figure 2: Annual growth rate of the total population in South Africa, 2002-2003 to 2017-2018



Source: MYPE 2019

[12] The Mid-Year Population Estimates (MYPE) of 2018 also produced by Stats SA and published on 23 July 2018 estimated the total population of South Africa to 57.7 million. The MYPE of 2019 published on 29 July 2019 presented the 2019 total population along with the annual growth rates of the total population since 2002-2003.

The annual growth rate of the South African population has increased between 2001-2002 and 2010-2011 and slightly decreased since then. The estimated overall growth rate increased from approximately 0.97 per cent per year for the period 2002-2003 to 1.55 per cent per year for the period 2010-2011 and decreased thereafter to 1.46 per cent per year in the period 2017-2018.

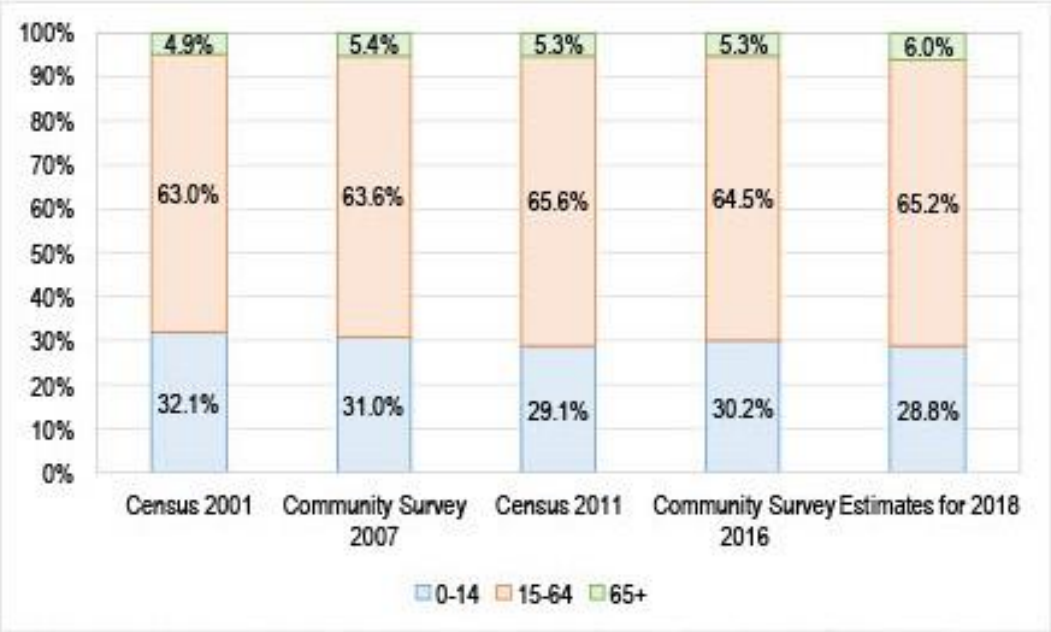
Table 1 and **Figure 3** present the development of the population structure since 2001.

Table 1: Total population of South Africa, by age groups, 2001, 2007, 2011, 2016 and 2018

Age	Census 2001	Community Survey 2007	Census 2011	Community Survey 2016	Estimates 2018
0–4	4 449 816	4 985 177	5 654 129	5 976 519	5 668 113
5–9	4 853 545	5 116 813	4 824 159	5 619 796	5 654 907
10–14	5 061 917	4 947 002	4 564 749	5 189 803	5 349 826
15–19	4 981 721	5 093 139	4 979 823	5 104 482	4 592 972
20–24	4 294 523	4 791 808	5 394 808	5 302 335	4 843 499
25–29	3 934 938	4 064 793	5 083 569	5 280 504	5 449 044
30–34	3 340 900	3 738 488	3 994 188	4 454 688	5 458 297
35–39	3 071 771	3 217 631	3 475 546	3 847 961	4 505 419
40–44	2 619 464	2 835 298	2 956 903	3 260 584	3 533 840
45–49	2 087 380	2 408 282	2 645 753	2 782 930	3 001 823
50–54	1 638 020	1 967 385	2 230 679	2 334 509	2 498 608
55–59	1 205 276	1 566 153	1 815 693	1 974 196	2 161 001
60–64	1 065 294	1 157 686	1 400 708	1 572 917	1 758 833
65–69	787 927	962 195	985 723	1 179 287	1 350 435
70–74	631 469	665 095	778 230	824 733	936 169
75–79	367 537	480 086	466 991	486 337	589 288
80+	428 278	505 033	518 909	462 071	594 316
Total	**44 819 776**	**48 502 064**	**51 770 560**	**55 653 652**	**57 946 389**

Source: Census 2001, Community Survey 2007, Authors' estimates based on figures from the Census 2011, Community Survey 2016 and Authors' estimates for 2018

Figure 3: Distribution of South Africa's population, by age groups 0-14, 15-64, 65+, years 2001, 2007, 2011, 2016 and 2018

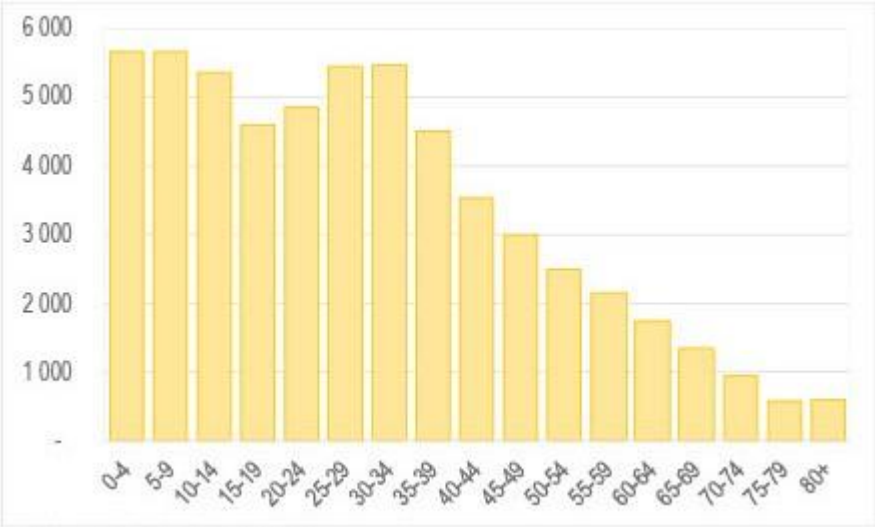


Source: Census 2001, Community Survey 2007, Census 2011, Community Survey 2016 and Authors' estimates for 2018

Between 2001 and 2018, the proportion of the population below age 15 has gradually decreased while the share of the working-age population (15 to 64 years) and those above age 65 has increased. The age-distribution still indicates a youthful population: as of 2018, about 28.8 per cent of the population (or around 16.7 million) is younger than 15 years and approximately 6.0 per cent of the population (or around 3.5 million) is 65 years or older.

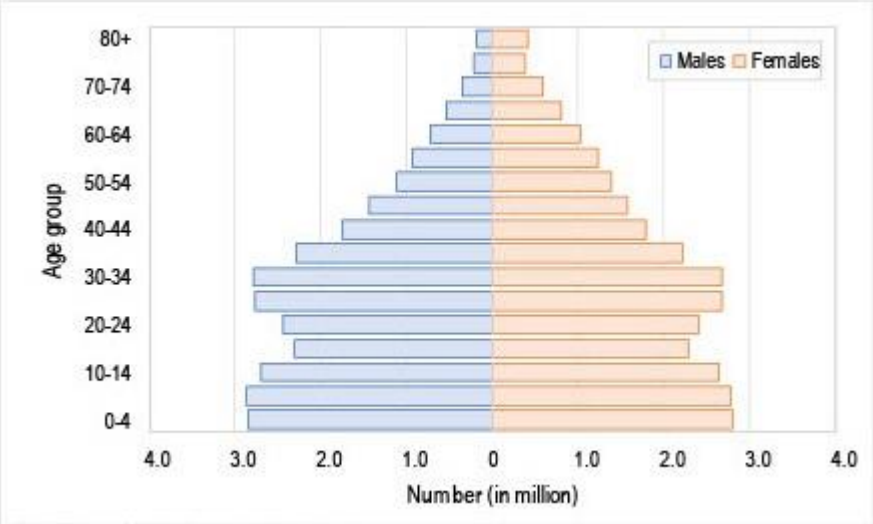
Figure 4 presents the estimated age-distribution of the population for year 2018. Figure 5 presents the structure of the national population (population pyramid) for year 2018, by age and sex.

Figure 4: Distribution of population, by age groups, years 2018 (in thousands)



Source: Authors' estimates for 2018

Figure 5: Structure of the national population, by age-groups and sex, 2018



Source: Authors' estimates for 2018

According to the various sources analyzed under the scope of this project, the sex ratio among age groups has remained relatively stable since 2001.

Table 2 presents the population of South Africa by age and sex for 2018.

Table 2: Population of South Africa, by age and sex, 2018

Age	Male	Female	Total
0–4	2 872 040	2 796 073	5 668 113
5–9	2 866 651	2 788 255	5 654 907
10–14	2 698 935	2 650 890	5 349 826
15–19	2 310 063	2 282 909	4 592 972
20–24	2 439 583	2 403 916	4 843 499
25–29	2 765 084	2 683 959	5 449 044
30–34	2 785 728	2 672 569	5 458 297
35–39	2 287 034	2 218 385	4 505 419
40–44	1 739 255	1 794 586	3 533 840
45–49	1 434 230	1 567 593	3 001 823
50–54	1 113 553	1 385 055	2 498 608
55–59	931 710	1 229 291	2 161 001
60–64	734 292	1 024 542	1 758 833
65–69	545 569	804 866	1 350 435
70–74	356 179	579 990	936 169
75–79	211 836	377 452	589 288
80–84	126 741	280 373	407 114
85–89	41 781	109 410	151 191
90–94	7 480	24 795	32 275
95–99	752	2 918	3 669
100+	12	56	68
Total	**28 268 509**	**29 677 880**	**57 946 389**

Source: Authors' estimates, ages 80+ distributed according to the World Population Prospects (WPP) 2019 estimates

2.1.1.Fertility

Levels of fertility in South Africa have been declining. According to the censuses produced since 2001, the Total Fertility Rate (TFR) declined from 2.84 children per woman in 2001 to 2,67 children per woman in 2011. In the latest MYPE report published (MYPE 2019 published on 29 July 2019), StatsSA has rather presented a TFR increasing from 2.45 children per woman in 2002 to 2.66 children per woman in 2008, gradually reducing thereafter to 2.51 children per woman in 2011 and 2.33 children per woman in 2018.

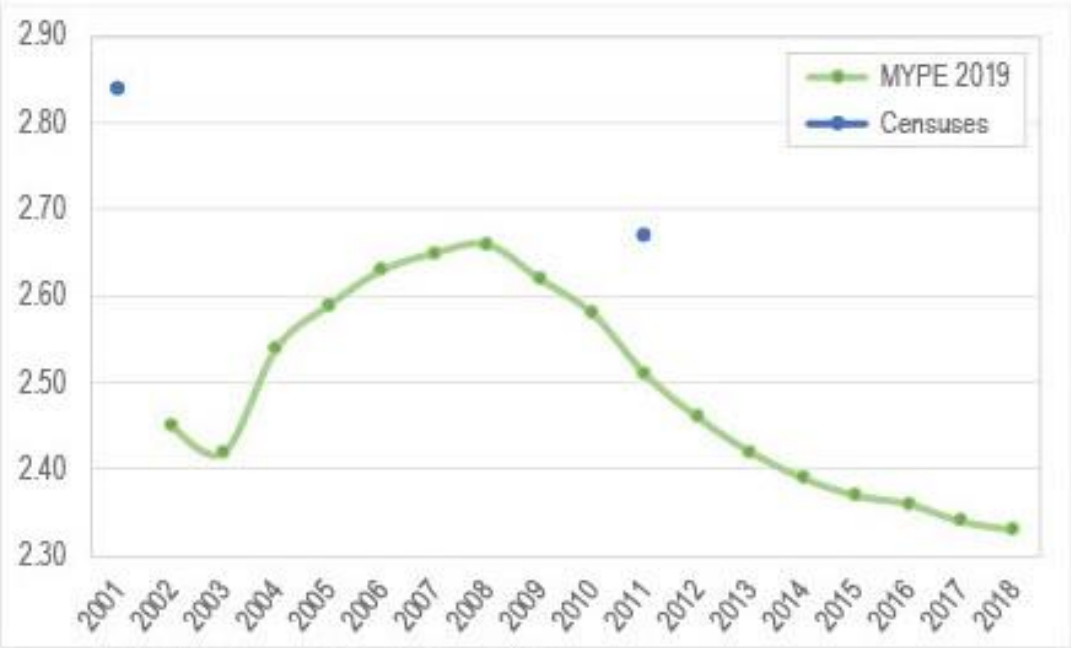
Data issues were sometimes observed in the censuses and community surveys. Given the extent of reported issues, the raw data have been adjusted to minimize the effect of the issues found on the estimates. StatsSA also review and adjust the past fertility trends and patterns from time to time to reflect recent experience and additional studies. Although the intention of the editing process is to have a positive impact on the quality of data, increases in the number of edits may also have a negative impact.

While data issues may have contributed to skew the fertility statistics presented in the censuses and community surveys in the past, the MYPE estimates were derived following a detailed review of TFR estimates (1985–2019),

published and unpublished, from various authors, methods and data sources. Thus, the latter statistics were deemed more accurate for the purposes of this study[13].

Figure 6 presents the evolution of the total fertility rates from 2002 to 2018 inclusively. For comparison purposes, the Census 2001 and Census 2011 are also shown in the figure.

Figure 6: Total fertility rates, 2001-2018

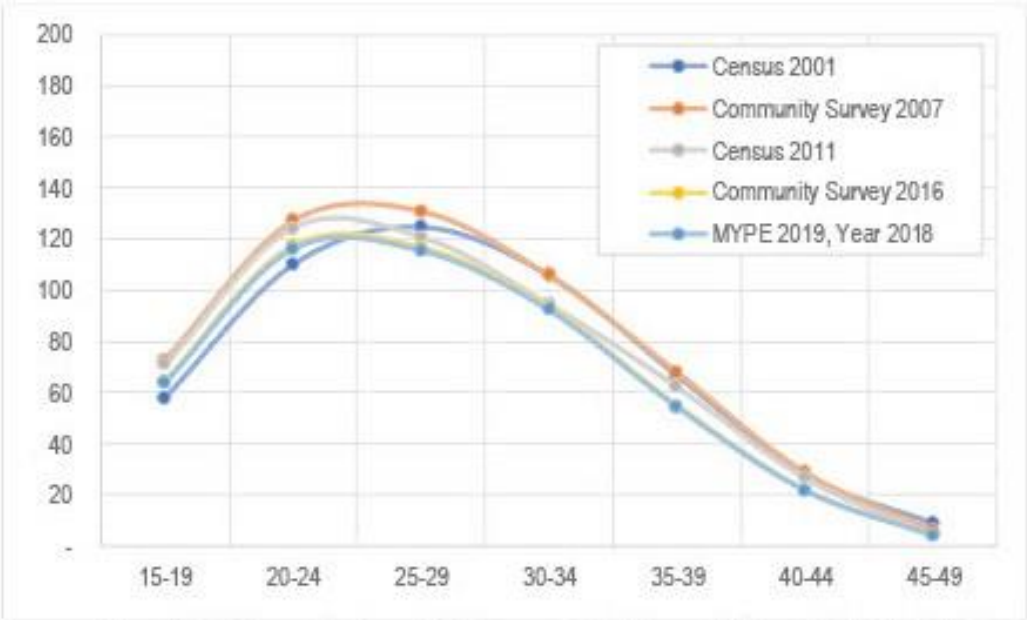


Source: MYPE 2019, Census 2001 and Census 2011

Figure 7 presents the evolution of the age-specific fertility rates from the Census 2001 to the MYPE 2019. The age-specific fertility rates from the censuses and community surveys have been adjusted to reflect the total fertility rates assumed in the MYPE of 2019. Age-specific fertility rates from the censuses and community surveys have been adjusted to reflect the total fertility rates estimates from the MYPE of 2019. The TFR of 2018 originating from the MYPE 2019 has been applied to the age-specific fertility rates from the last community survey, the Community Survey 2016, to obtain the age-specific fertility rates for year 2018.

[13] This methodology refers to the TFR estimated originating from the MYPE of 2019.

Figure 7: Age-specific fertility rates, in percent, 2001, 2007, 2011, 2016 and 2018

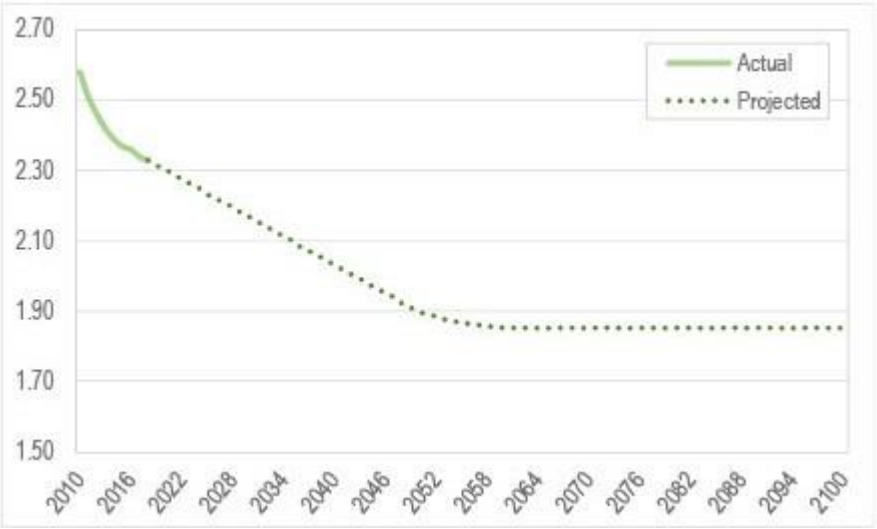


Source: Census 2001, Community Survey 2007, Census 2011, Community Survey 2016, MYPE 2019 and authors' adjustments based on TFR estimates from the MYPE 2019

Although the age-specific fertility rates and the trends in total fertility rate are consistent with what have been documented in prior surveys, censuses and studies, it is important to remain prudent. The fertility statistics presented above have been produced either by editing raw data or by calibration. Nonetheless, according to the various sources analyzed, the Total Fertility Rate for 2018 is likely to be between 2.3 and 2.4 children per woman.

The TFR in South Africa is assumed to decrease from its current level of 2.33 in 2018 to 2.17 in 2030, 2.03 in 2040 and 1.90 in 2050. The TFR is projected to reach its ultimate level of 1.85 in 2060. **Figure 8** presents the TFR assumed under this actuarial study.

Figure 8: Total fertility rates, 2010-2100



Source: MYPE 2019 and Authors' projections

For the first few years of the projection period, the total fertility rates have been estimated implicitly based on the population distributions at the valuation date: the projected number of births for the first few years were projected

consistently with the past trends. The age-specific fertility rates were assumed to shift gradually from their current pattern to the pattern proposed by the WPP 2019 for South Africa from 2050. The sex ratio of newborns has been estimated to 1.03 male per female throughout the projection period.

The age-specific fertility rates and TFR for years 2020, 2030, 2040, 2050 and 2060 appear in **Table 3**.

Table 3: Age-specific fertility rates and TFR, 2020, 2030, 2040, 2050 and 2060+

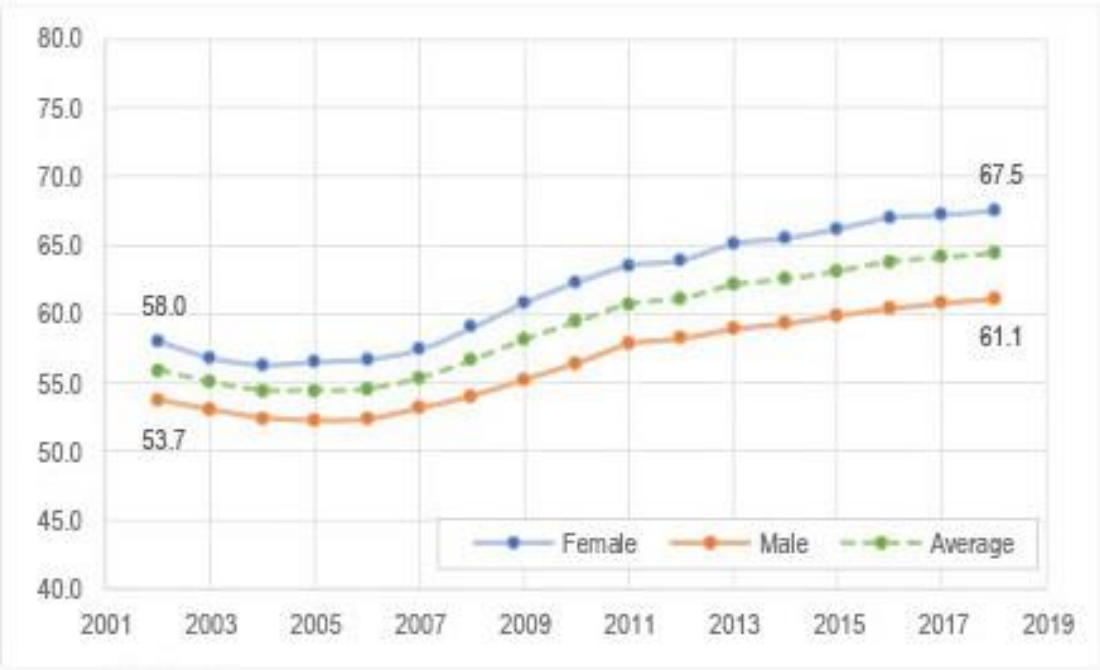
Age of mother	Fertility rates				
	2020	2030	2040	2050	2060+
15–19	0.31486	0.30198	0.28911	0.27624	0.25249
20–24	0.57115	0.52267	0.47418	0.42570	0.40263
25–29	0.57447	0.55756	0.54066	0.52376	0.51941
30–34	0.45612	0.43211	0.40810	0.38408	0.39229
35–39	0.26630	0.24807	0.22985	0.21162	0.21287
40–44	0.10327	0.09121	0.07915	0.06709	0.06518
45–49	0.01677	0.01401	0.01126	0.00851	0.00734
Total fertility rate	**2.30**	**2.17**	**2.03**	**1.90**	**1.85**

2.1.2.Mortality

The various sources[14] analyzed during the scope of this project show that South Africa is continuing to make progress in extending life expectancy and reducing mortality.

Figure 9 illustrates the evolution of the life expectancy at birth for males and females since 2001.

Figure 9: Life expectancy at birth, by sex, 2002-2018



[14] The sources include the YMPE 2019, the Rapid Mortality Surveillance Report of 2017, the 2019 Revision of the World Population Prospects, the World Bank and the Global Burden of Disease report of 2017 (see the Rapid Mortality Surveillance Report of 2017 for more details).

Source: MYPE 2019

Among the various sources analyzed, there is some consistency in the overall conclusion that life expectancy at birth for both males and females reached a minimum between 2004 and 2006. According to the MYPE of 2019, the average life expectancy in South Africa has increased by 10.0 years from the low of 54.4 years in 2005, reaching a level of 64.4 years in 2018[15].

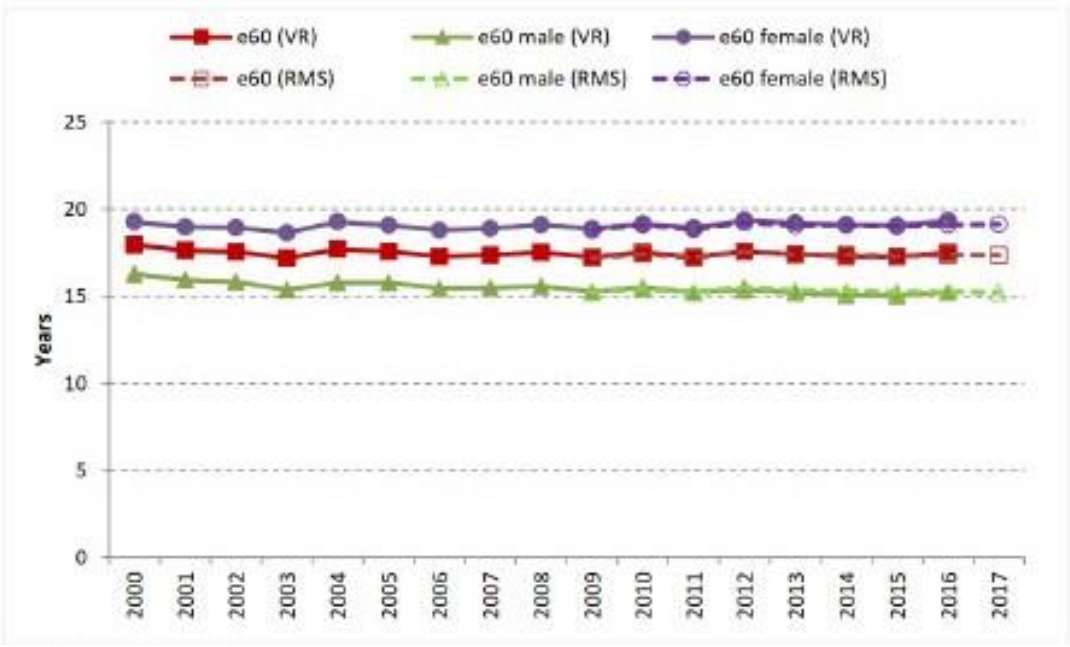
In all cases, the life expectancy of females is higher than that of males throughout the period with the difference getting higher from around 2008. In fact, while the difference between the life expectancy at birth of males and females averaged at 4.2 years between 2001 and 2007, the difference has gradually increased from 5.0 years in 2008 to 6.4 years in 2018.

The MYPE of 2019 are almost entirely consistent with the estimates originating from the Rapid Mortality Surveillance Report (RMS) of 2017[16]. It is noted that the WPP 2019 estimates slightly underestimate the life expectancy at birth for both males and females compared to MYPE 2019 and RMS 2017. According to the latter, the WPP overestimates the adult mortality and underestimates the mortality related to the youths.

Life expectancy at age 60 is a useful summary of the mortality experienced by older South Africans. The MYPE 2019 does not present life expectancies at age 60. However, according to the RMS 2017, although the life expectancy at birth improved significantly in the past few years, the mortality rates in older ages have shown little change. The life expectancy at age 60 has been around 15 years for men since 2000 and around 19 years for women for the same period. This suggests that the mortality between ages 0 and 59 has been the main driver of the increases in the life expectancy in South Africa since 2001. The RMS report estimates the residual life expectancy at age 60 to 15.2 years for males and 19.1 years for females for year 2017.

Figure 10 presents the evolution of the life expectancies at age 60 for males and females since 2012.

Figure 10: Life expectancy at the age of 60 (e60) from VR[17] and RMS 2017, 2000-2017 (after adjusting for incompleteness)



Source: RMS 2017

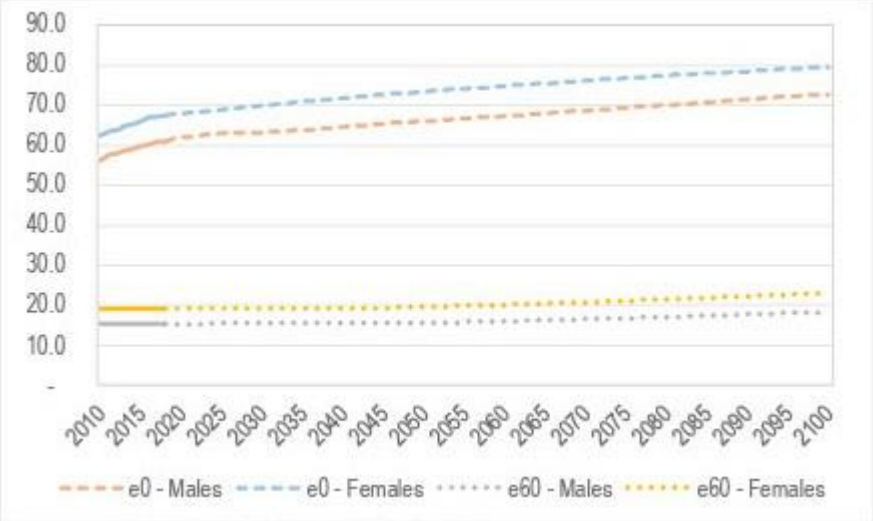
[15] Similar conclusions were drawn from the Rapid Mortality Surveillance Report of 2017. According to the latter, the average life expectancy has increased by 10.5 years from between the low of 53.7 years in 2005 and the level of 64.2 years estimated in 2017.
[16] The Rapid Mortality Surveillance Report of 2017 estimated the life expectancy at birth to 61.2 years for males and 7 years for females for year 2017.
[17] VR refers to Vital Registration

The mortality rates assumed in years 2018 have been adjusted to match the general life expectancy at birth of males and females (as estimated in the MYPE of 2019) as well as the residual life expectancy at age 60 of males and females (as estimated in the RMS 2017). The estimates of the general infant mortality rates and the mortality rates under 5 years old made by the RMS 2017 have been incorporated in the mortality Table. Other mortality indicators not published in the MYPE 2019 but computed in the RMS 2017 have been incorporated in the mortality rates assumed for 2018[18]. The mortality rates have been calibrated and adjusted to ensure general consistency.

In the short run, which is about up to the year 2031, the general life expectancy at birth is assumed to increase in line with the projections made by StatsSA[19]. For the medium- and long-term projections, information of the WPP are used to estimate the increases in the life expectancy. Over the projection period 2018-2100, the general life expectancy at birth is assumed to increase from 61.1 years to 72.7 years for males and from 67.5 years to 79.5 years for females. Similarly, to the recent trends, the residual life expectancy at age 60 is assumed to remain relatively stable for the first 20-30 years of the projection period. The residual life expectancy at age 60 is ultimately projected to reach 18.3 years for males and 22.9 years for females in 2100, as South Africa moves towards universal health coverage through the implementation of the National Health Insurance.

Figure 11 illustrates the actual and projected life expectancies at birth for both males and females, along with the actual and projected life expectancies at age 60.

Figure 11: Life expectancy at birth and at age 60, by sex, 2010-2100



Source: MYPE 2019, RMS 2017 and Authors' projections

2.1.3.Migration

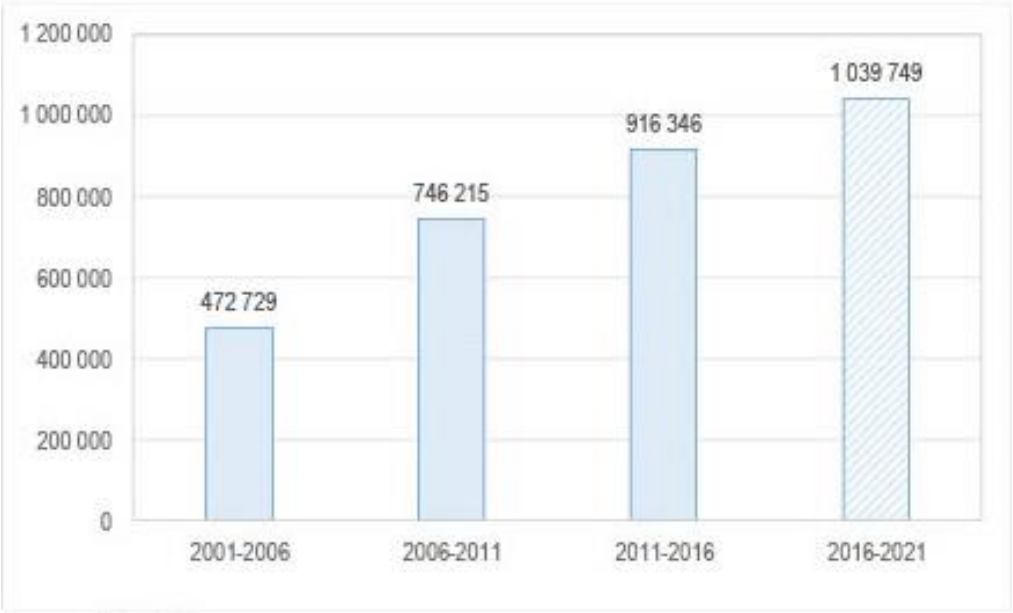
Migration is an important demographic process, as it shapes the age structure and distribution of the provincial population.

Figure 12 presents the estimated development of the net migration per 5-year periods since 2001. The period 2016-2021 includes migration estimates from StatsSA published in the MYPE of 2019.

[18] Includes mortality rates among children and young adolescents (10q5) for both males and females, mortality rates among older adolescents and youths (10q15) for both males and females and adult mortality (45q15) for both males and females.

[19] StatsSA projects until year 2051. It is however necessary to deviate from their short-term projections to come up with long-term assumptions.

Figure 12: Net migration, by 5-year periods, 2001-2021[20]



Source: MYPE 2019

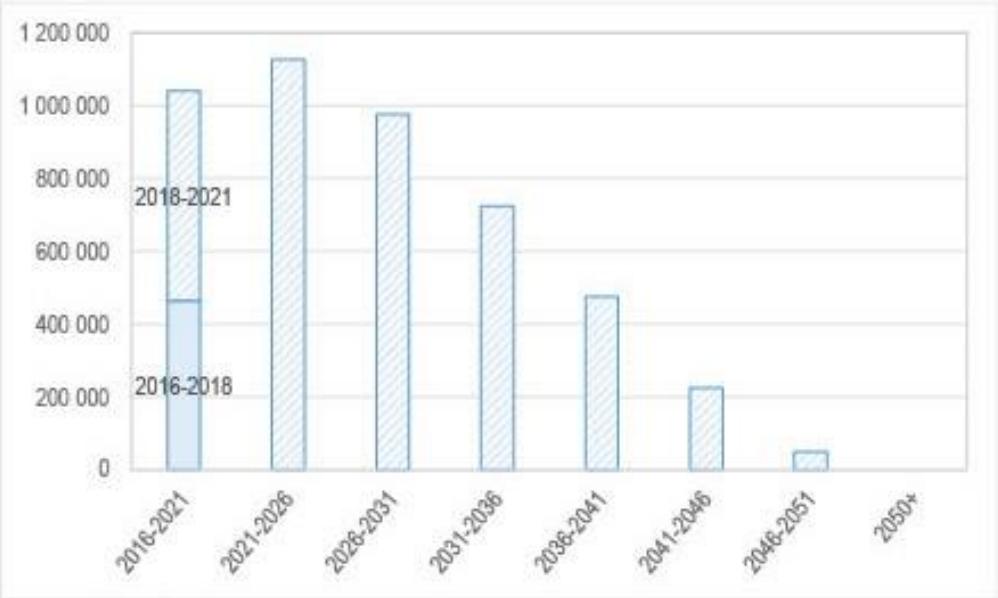
Net international migration estimates were derived by StatsSA using the Census 2011, but also migration data from various other authors, methods and data sources such as the Organization for Economic Co-operation and Development (OECD), International Organization for Migration (IOM) as well as census data from National statistics offices of other countries. A clear trend can be drawn from the figure above: the net migration in South Africa is largely positive and has continuously increased since 2001.

Migration can be seen as the most difficult component of growth to forecast accurately as migration rates are subject to much greater volatility than either fertility or mortality rates. Compared to other components of change (fertility and mortality), net migration is more significantly impacted by economic and political changes. The latest estimates from the MYPE 2019 were used as a starting point for the demographic projections and calibrations were done to match annual population growth rate expected in the first few years of the projection. Because of its underlying uncertainties and its potential on the overall results of the actuarial valuation, it has been assumed that the migration flow will remain relatively high in the next few years but will eventually stops by 2050. Positive net migration tends to reduce the cost of a social security system. This approach is therefore considered reasonable in the long run to avoid the cost of the plan being "too" influenced by external, volatile and difficult to control sources.

Figure 13 presents the migration assumptions retained under this actuarial valuation. The projections assume a reduced level of migration for years 2020 and 2021 to reflect the short-term impacts of the COVID-9 crisis.

[20] The estimate refers to the periods from the 30 June of the first year to the 1 July of the last year.

Figure 13: Net migration, by 5-year periods, 2016-2050+



Source: Authors' projections

2.1.4.Population projection

The total population of South Africa, estimated at 57.9 million in 2018 and 58.8 million in 2019[21], is projected to reach a peak in 2070 at 79.0 million and decrease gradually thereafter to 76.7 million in 2100.

Table 4 presents detailed population projections by age group. The number of persons aged 65 and over will grow from 3.5 million in 2018 to 14.9 million in 2100, the fastest growth among the three groups. At the same time, the working-age population aged between 15 and 64 who will potentially support the elderly will increase from 37.8 million in 2018 to 52.4 million in 2070 and start decreasing thereafter to reach 48.4 million in 2100. As a result, the number of working-age persons who support one elderly person aged 65 and over will fall from 10.9 in 2018 to 3.2 in 2100, as seen in the last Column of **Table 4**.

Figure 14 illustrates the gradual ageing of the population of South Africa over the projection period. For comparison purposes, the estimates from the Census 2001 and the Census 2011 are also presented.

[21] MYPE of 2019.

Table 4: Projected population of South Africa, 2018–2100 (in millions)

Year	Age group				Working age (15–64)/65+ ratio (in %)
	0–14	15–64	65+	Total	
2018	16.7	37.8	3.5	57.9	10.9
2020	16.9	39.0	3.6	59.5	10.7
2030	17.0	45.3	4.7	67.0	9.6
2040	17.1	50.0	5.9	73.0	8.5
2050	16.6	52.1	8.0	76.7	6.5
2060	15.6	52.3	10.5	78.5	5.0
2070	15.1	52.4	11.5	79.0	4.5
2080	14.6	51.1	13.0	78.7	3.9
2090	13.9	50.0	14.0	77.9	3.6
2100	13.4	48.4	14.9	76.7	3.2

Source: Authors 'estimates for year 2018 and Authors 'projections for years 2020-2100

Figure 14: Projected ageing of the population, 2018-93 (in millions)

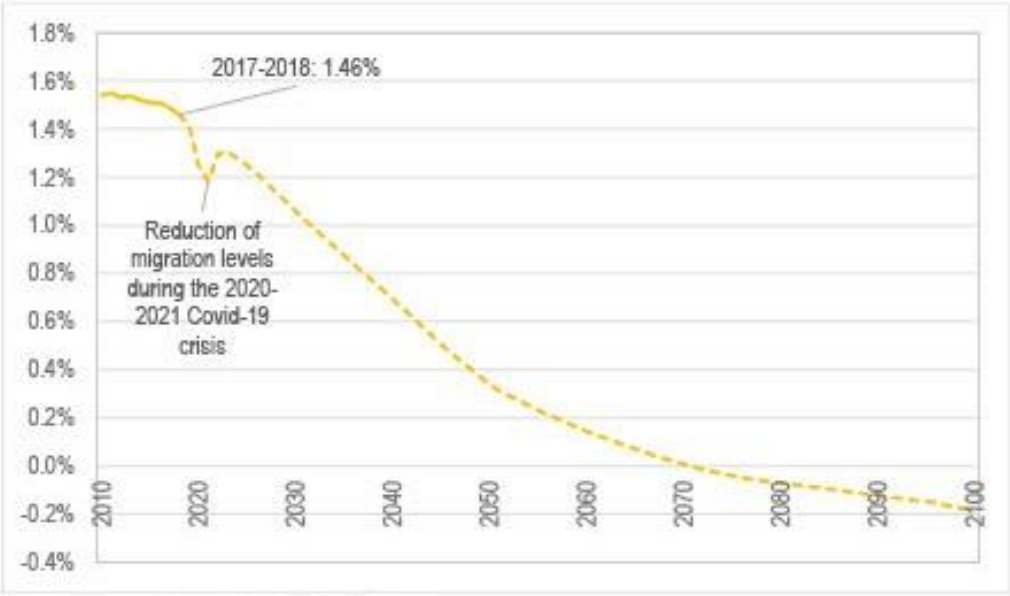


Source: Census 2001, Census 2011 and Authors' estimates and projections

The above figure shows that the working-age population will remain relatively stable as a percentage of the total population over the projection period, varying from 63 to 68 per cent of the total population. On the other hand, the ratio of the children to the total population will gradually decrease over the projection period as a result of the projected decline in fertility rates. Also, the ratio of the elderly (aged 65 and above) to the total population will continue to increase over the projection period.

Figure 15 presents the projected annual growth rates of the total population of South Africa. For comparison purposes, the figure also presents the period from 2010 to 2018 as per MYPE 2019 estimates.

Figure 15: Projected annual growth rates of the total population of South Africa, 2018-2100



Source: MYPE 2019 and Authors' projections

2.2. Macroeconomic framework

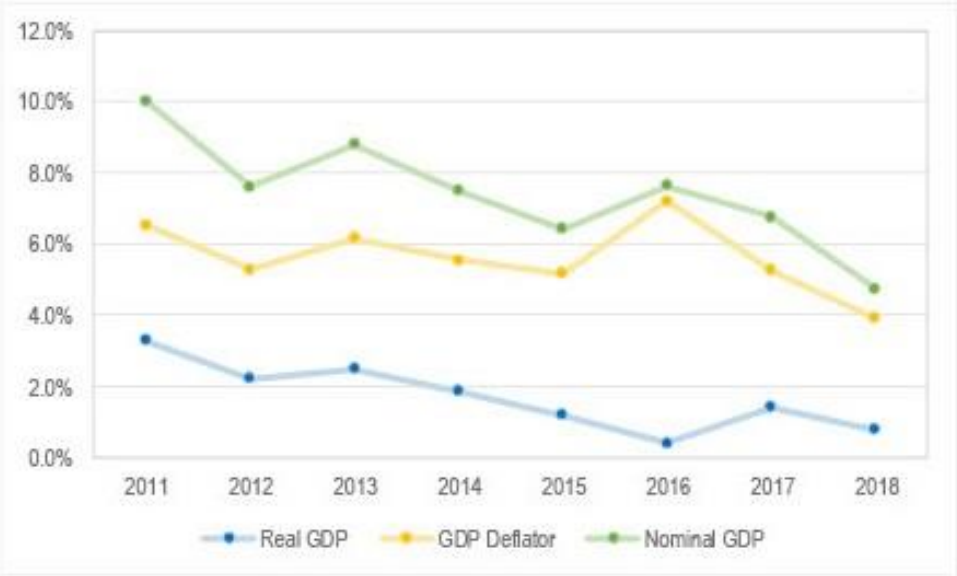
This section presents the recent macro-economic experience in South Africa as well as the economic assumptions used under this valuation.

2.2.1. Experience between 2011 and 2018

According to StatsSA, the annual real Gross Domestic Product (GDP) growth rate averaged at 1.7 per cent between 2010 and 2018 inclusively while the nominal GDP growth rate increased at an average rate of 7.4 per cent per year during the same period[22]. The GDP deflator increase on average at an annual growth rate of 5.6 per cent between 2010 and 2018 inclusively. **Figure 16** contrasts the growth rates of the real GDP, the GDP deflator and the nominal GDP over the period 2011-2018.

[22] Also consistent with the estimates from the *Economist* Intelligence Unit (EIU) and the International Monetary Fund (IMF).

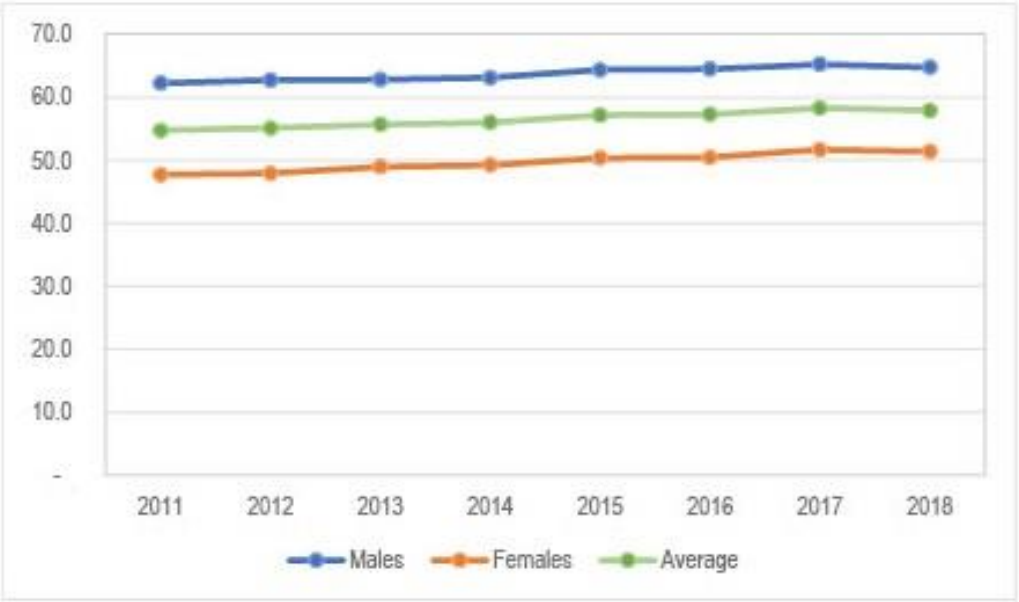
Figure 16: Real GDP, GDP Deflator and Nominal GDP, 2011-2018



Source: StatsSA

Figure 17 illustrates the evolution of the labour force participation rates (ages 15-69) between 2008 and 2018 inclusively.

Figure 17: Labour force participation rate (ages 15-69), 2011 to 2018 (in percentage)

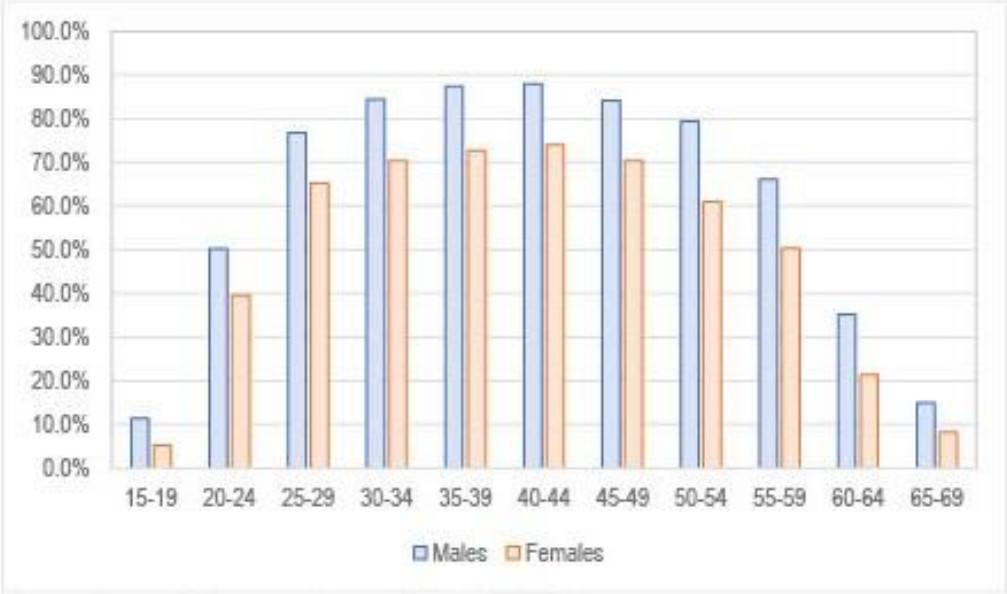


Source: Quarterly Labour Force Surveys 2011 to 2008

The overall labour force participation rate was estimated to 57.9 per cent (ages 15-69) for 2018. Between 2011 and 2018, the general participation rate among males has increased by 2.5 per cent, from 62.2 to 64.7 per cent and the general participation rate among females has increased by 3.7 per cent, from 47.7 to 51.4 per cent.

Figure 18 presents the labour force participation rates by age groups and sex for year 2018.

Figure 18: Labour force participation rates, 2018, by age groups and sex



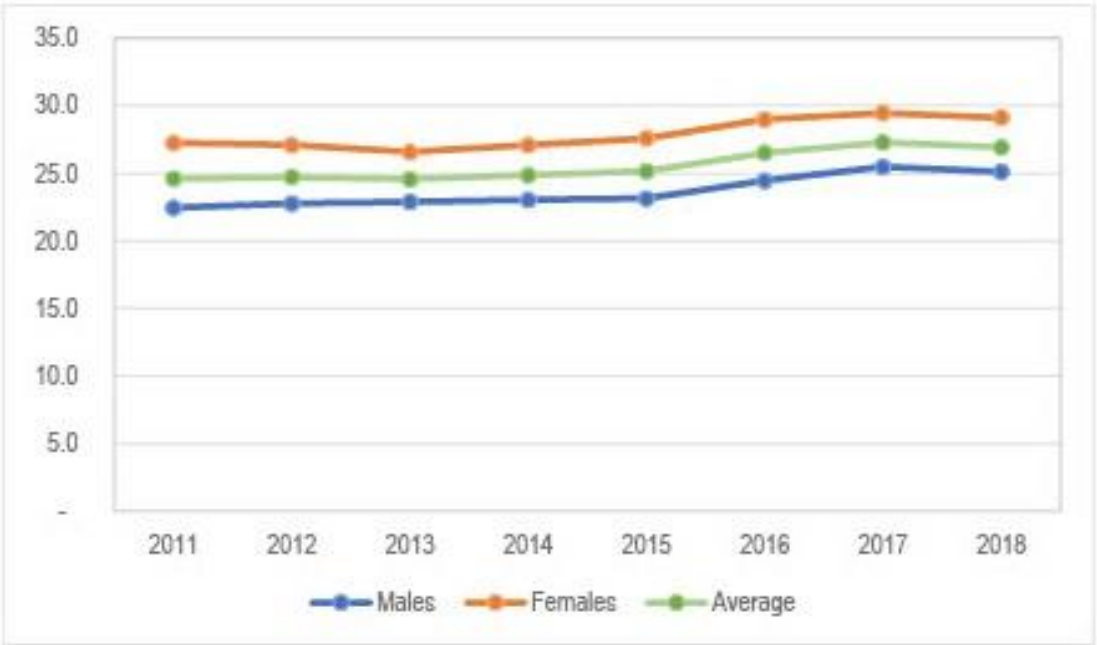
Source: Quarterly Labour Force Survey 2018 (QLFS-2018)

Figure 19 illustrates the evolution of the unemployment rate between 2011 and 2018.

The overall unemployment rate was estimated to 26.9 per cent for 2018. Between the 2011 and 2018, the unemployment rates among males have increased by 2.7 per cent, from 22.4 to 25.1 per cent and the unemployment rates among females have increased by 1.9 per cent, from 27.2 to 29.1 per cent.

As per the QLFS 2018, the youth aged 15–24 years are the most vulnerable in the South African labour market. In fact, the overall unemployment rate among this age group was estimated at 51.9 per cent in 2018. The unemployed persons aged below 35 explain for more than 60 per cent of the total number of unemployed persons in South Africa.

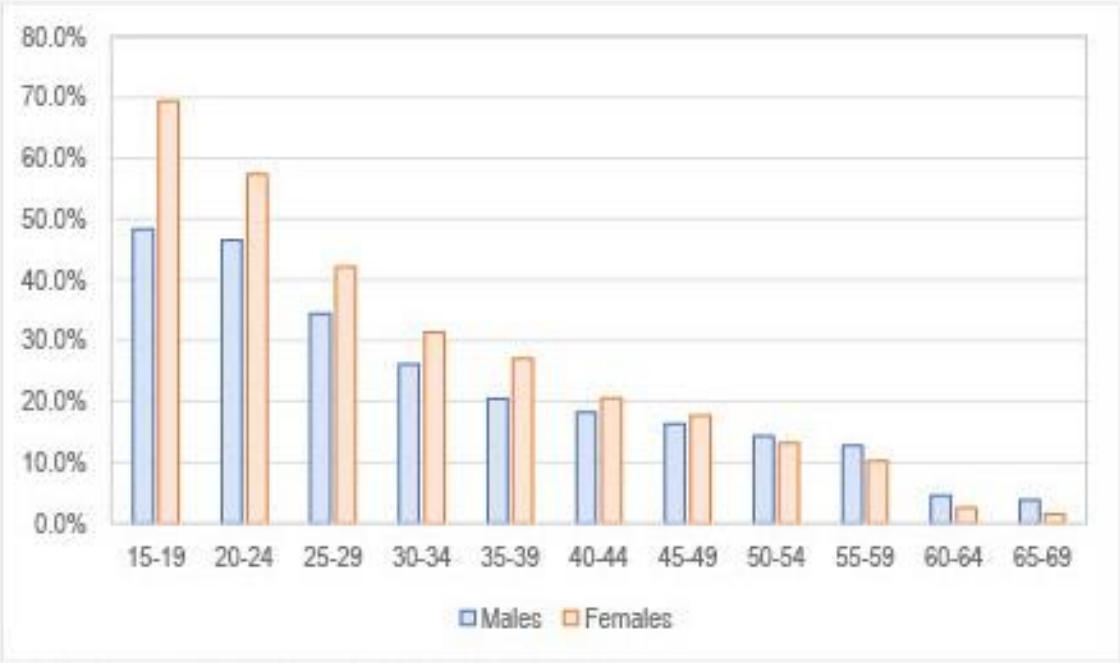
Figure 19: Unemployment rate, first quarter of 2011 to last quarter of 2018 (in percentage)



Source: Quarterly Labour Force Surveys 2011 to 2008

Figure 20 presents the unemployment rates by age-groups and sex in year 2018.

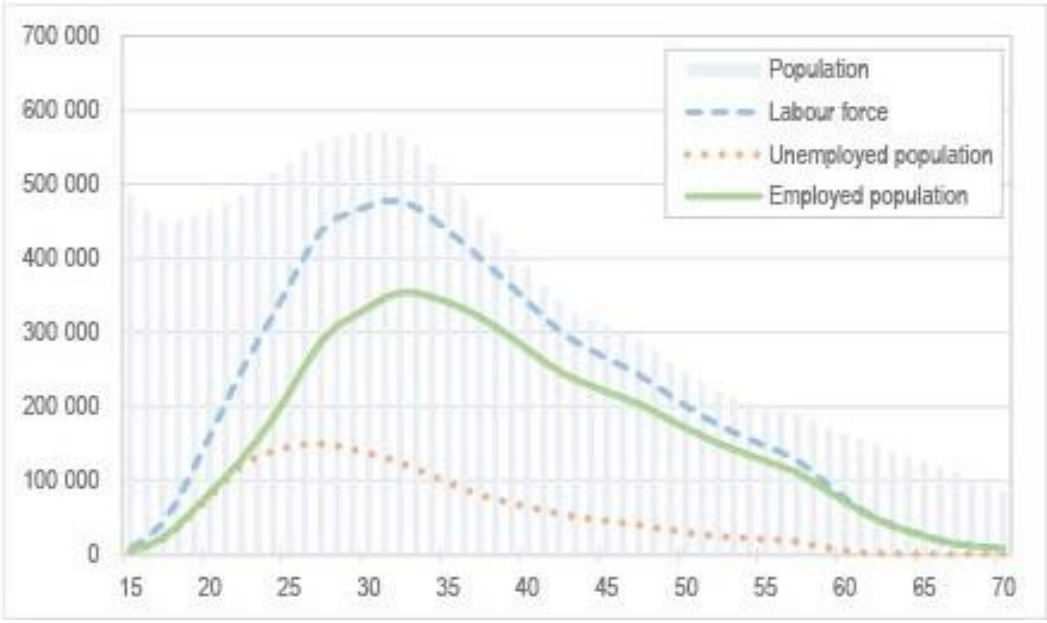
Figure 20: Unemployment rates, 2018, by age groups and sex



Source: Quarterly Labour Force Survey 2018 (QLFS-2018)

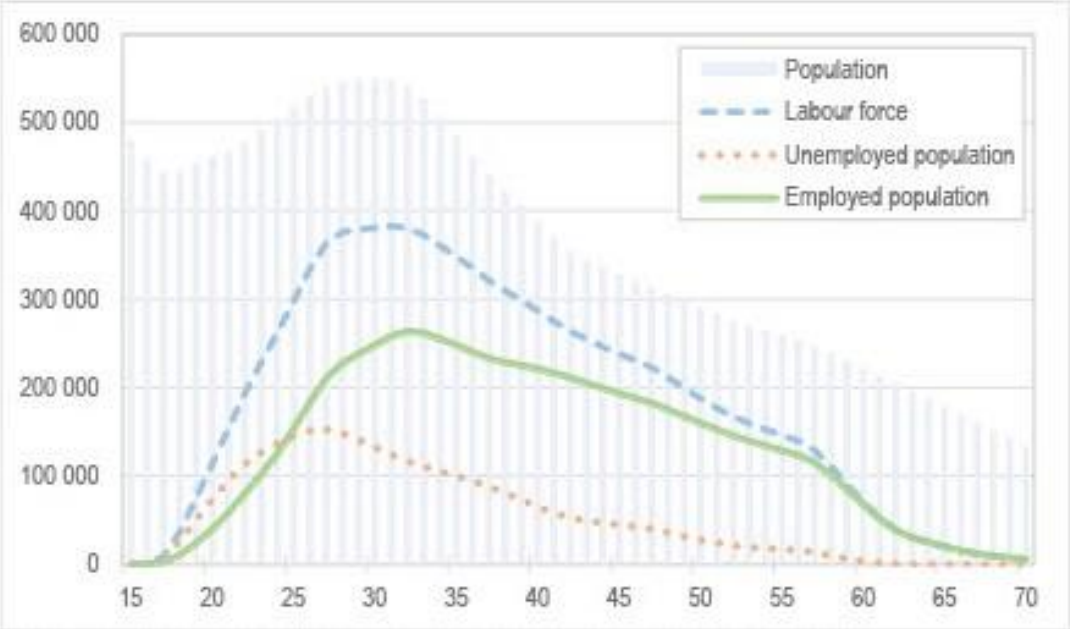
Figure 21 and **Figure 22** illustrate the age-distributions related to the population, the labour force population, the employed and the unemployed population for year 2018.

Figure 21: Population, labour force population and unemployed population, 2018, by age, males



Source: Authors' estimates based on Quarterly Labour Force Survey 2018 (QLFS-2018)

Figure 22: Population, labour force population and unemployed population, 2018, by age, females



Source: Authors' estimates based on Quarterly Labour Force Survey 2018 (QLFS-2018)

The evolution of the productivity growth rate was derived from the real GDP growth rates, the employment growth rates, and the wage share of GDP and is shown in the following table. According to StatsSA, the wage share of GDP has increased gradually since 2011, from 44.9 per cent in 2011 to 47.7 per cent in 2018.

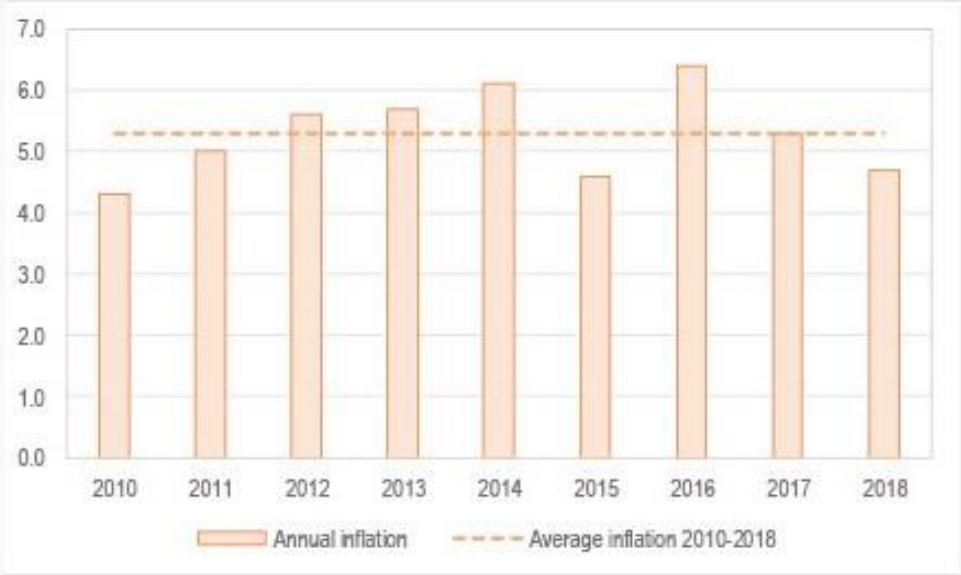
Table 5: Wage share of GDP and Real GDP, Employment and Productivity growth rates, 2011-2018 (in percent)

Year	Wage share of GDP	Real GDP growth rate	Employment growth rate	Productivity growth rate
2011	44.9	3.3	2.0	3.1
2012	45.0	2.2	2.5	-0.2
2013	45.5	2.5	3.1	0.6
2014	46.0	1.8	1.9	1.1
2015	46.5	1.2	3.9	-1.6
2016	47.0	0.4	0.3	1.3
2017	47.4	1.4	2.5	-0.2
2018	47.7	0.8	2.5	-1.1
Average	**46.3**	**1.7**	**2.3**	**0.4**

Source: StatsSA (wage share of GDP, real GDP growth rate and employment growth rate) and authors' calculations (wage growth rate)

Since 2010, the inflation increased annually at an average rate of 5.3 per cent. **Figure 23** presents the inflation growth rates from years 2010 to 2018 along with the average inflation rate observed over the period.

Figure 23: Inflation rate and average inflation rate, 2010-2018



The evolution of the real gross earnings for the years 2011 to 2019 is presented in **Figure 24**. It has increased on average by 1.46 per cent per year over the period analysed.

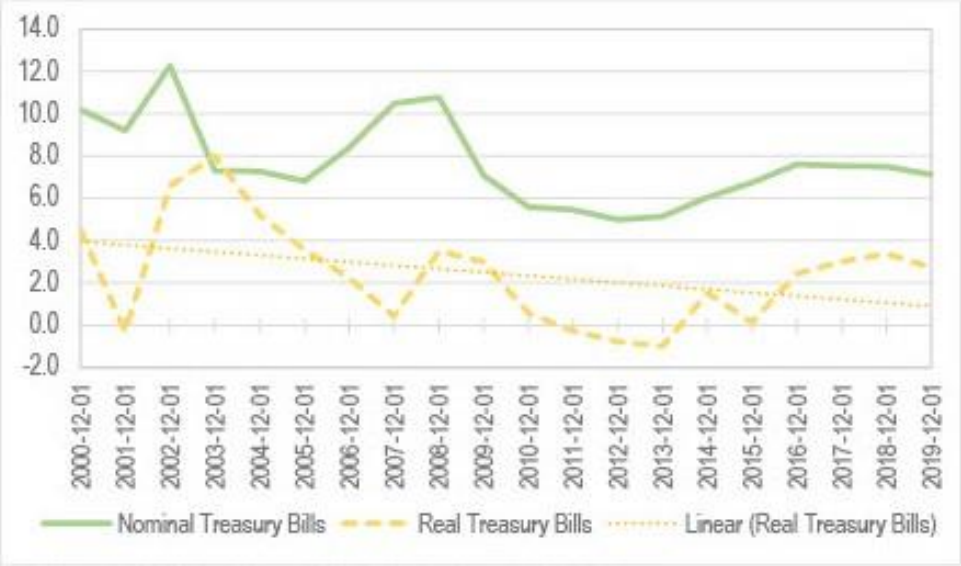
Figure 24: Real gross earnings and average real gross earnings increase, 2011-2019, percentage



Source: StatsSA, QES 2019, calculations made by the Authors

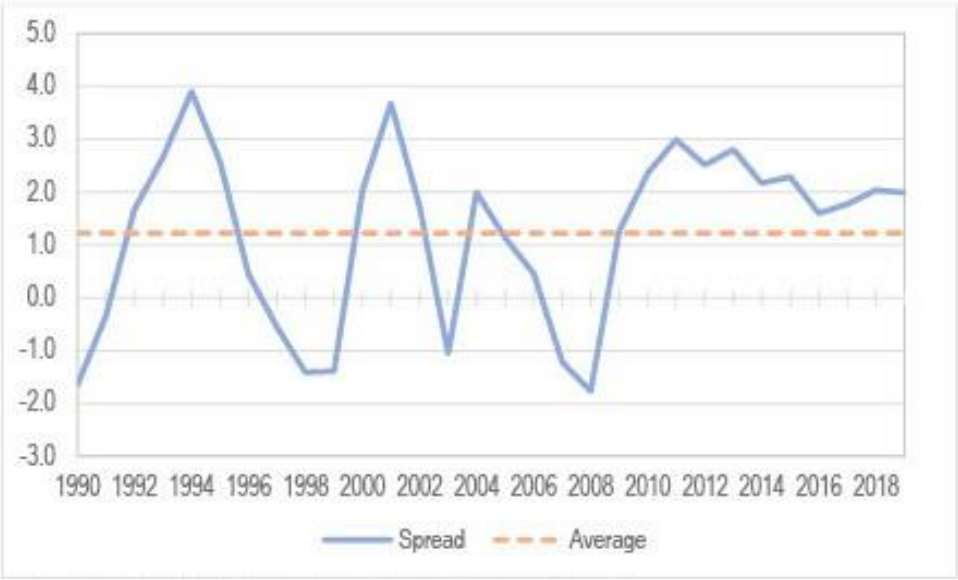
Over the last 20 years, the Treasury Bills, net of inflation, have shown a downward trend. Over the last twenty years, ten years and five years the average real rate was respectively 2.3 per cent, 1.1 percent and 2.2 percent. The spread between the Government 10-year bonds and the Treasury Bills for a period starting in 1990 has been 1.2 per cent. Over the last decade it was 2.3 per cent.

Figure 25: Treasury Bills, nominal and real, 2000-2019, percentage



Source: Federal Reserve Bank of St. Louis, Economic Research Division

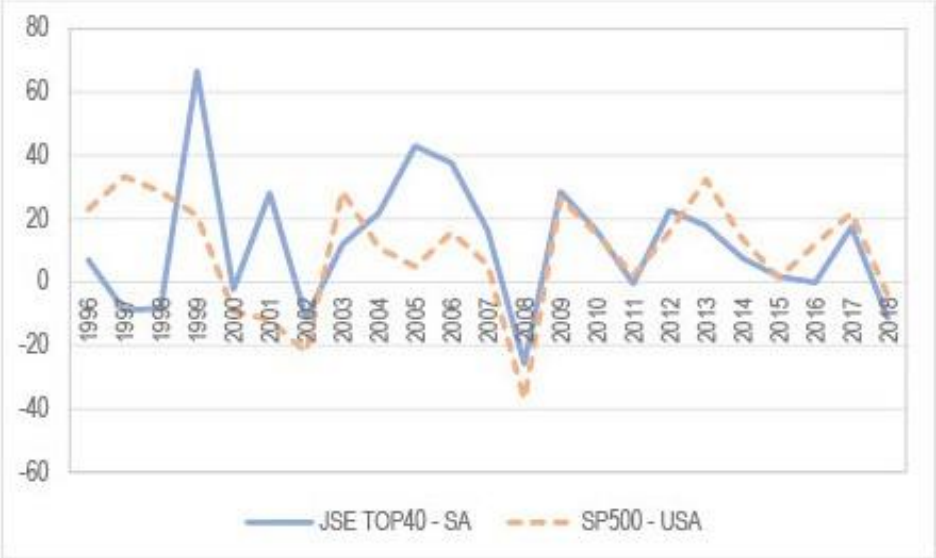
Figure 26: Spreads between Government 10-year Bonds and Treasury Bills, 1990-2019, percentage



Source: Federal Reserve Bank of St. Louis, Economic Research Division

The average nominal return of the Johannesburg Stock Exchange Top 40 Tradeable Index (JSE TOP40) from January 1996 to June 2019 has been 10.3 per cent If the effect of the inflation is removed, the real return of the JSE TOP40 has been close to 4.5 per cent. As illustrated on the following figure, the return of the JSE TOP40 is highly correlated with the SP 500 of the USA.

Figure 27: Return of the JSE TOP40 and, SP500 USA, 1996-2018, percentage

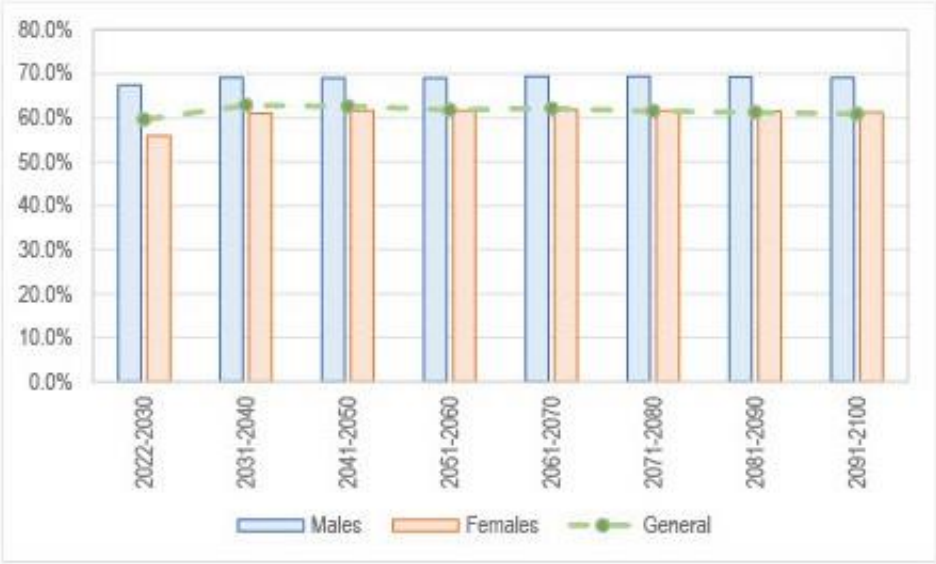


Source: DSD, Canadian Institute of Actuaries

2.2.2. Projection assumptions

The participation rates among males and females are expected to continue increasing in the future following a pattern similar to that observed in the past few years before the COVID-19 crisis. The overall participation rate over the population aged 15 to 69 is projected to exceed 60 per cent over the long-term. Although a difference in the participation rates of males and females is projected to remain in the future, the gap between males and females' participation rates is projected to slightly reduce over time. Over the first 20 years of the projection period, the participation rate among males aged 15-69 is expected to increase by 3.0 per cent, from 64.7 to 67.7 per cent while the participation rate among females is expected to increase by 8.5 per cent, from 51.4 to 59.9 per cent.

Figure 28: Labour force participation rate, 2022-2100 (in percentage)



Similarly, to what was experienced in the last few years, the unemployment rate is assumed to continue increasing over the next few years, reaching up to 30.0 per cent over the population aged 15 to 69 by 2024. Between 2024 and 2040, the unemployment rate is assumed to remain relatively stable around 30-31 per cent. The unemployment

rate is then projected to decrease gradually to 13.3 per cent over the population aged 15 to 69 in 2100 as a result of the gradual aging of the population and the decreasing growth rate of the working-age population over the projection period.

The evolution of the total population of South Africa as well as the various components of the labour force appear in **Table 6**.

The real wage growth is expected to be in line with the labour productivity growth rate. Wage growth takes into account the history as well as a long-term reasonable assumption. The annual real wage increase is expected to be 1.1 per cent for all the projection years.

The South African Reserve Bank (SARB) is responsible for the monetary policy of South Africa. South Africa's monetary policy is conducted within an inflation targeting framework and the refinancing system is the mechanism used by the Bank for the implementation of monetary policy. According to the Monetary Policy Statement of 21 November 2019, the SARB will continue to focus on anchoring inflation expectations near the mid-point of the inflation target range in the interest of balanced and sustainable growth.

Given that the SARB will continue to focus on anchoring inflation expectations near the mid-point of the inflation target range, the inflation has been projected at 4.5 per cent per year from 2022.[23]

Table 6: Population, labour force and employment, 2022-2100

	2022	2025	2050	2075	2100
Population (in million)	61.0	63.4	76.7	78.9	76.7
Male	29.8	31.0	37.3	37.9	36.8
Female	31.2	32.4	39.4	41.0	40.0
Working-age population (15–69) (in million)	41.7	43.9	55.4	55.9	52.8
Male	20.4	21.5	27.2	27.4	26.0
Female	21.3	22.4	28.2	28.6	26.8
Labour force participation rate (%)	58.9%	59.6%	61.9%	61.5%	60.6%
Male	65.3%	65.6%	65.8%	65.7%	65.0%
Female	52.8%	53.9%	58.1%	57.4%	56.5%
Labour force population (in million)	24.6	26.2	34.3	34.4	32.0
Male	13.3	14.1	17.9	18.0	16.9
Female	11.3	12.1	16.4	16.4	15.1
Employed population (in million)	17.3	18.3	25.9	28.4	27.8
Male	9.6	10.2	13.8	15.1	14.8
Female	7.7	8.1	12.1	13.3	13.0
Unemployed population (in million)	**7.3**	**7.9**	**8.4**	**6.0**	**4.3**
Male	3.7	3.9	4.1	2.9	2.1
Female	3.6	3.9	4.3	3.1	2.2
Unemployment rate (%)	29.6%	30.1%	24.4%	17.5%	13.3%
Male	27.6%	28.0%	22.7%	16.3%	12.4%
Female	32.1%	32.6%	26.4%	18.8%	14.4%

[23] The SARB's inflation target range is situated between 3 and 6 percent per year.

3. SCHEME-SPECIFIC DATA AND ASSUMPTIONS

In addition to the demographic and economic data and assumptions presented in Chapter 2, the financial projection of the scheme requires data and assumptions specific to its membership and some other specific actuarial assumptions.

The database used to make the projections comes mainly from information from GEPF and UIF as they are the two main groups that will make up the insured population of the new NSSF, at least at the time of implementation. When possible, the selection of assumptions takes into account the recent experience of the GEPF and UIF (where information is available). Also affecting the choice of assumptions are long-term trends, which may be more meaningful than recent results.

For simplicity, the actuarial valuation is going to be done by calendar year. It is possible that the financial year of the new NSSF will be from 1 April to 31 March like UIF. This simplicity will not affect the nature of the work as well as the results.

Establishing assumptions for a non-existent scheme like the new NSSF is difficult because some information simply does not exist. While it is possible to have a good idea of the insured population or the number of months of contribution, it is not possible to have information about the family, the mortality or the invalidity experience. Consequently, some assumptions are based on the best available information and new emerging experience of the scheme must be used to adjust these assumptions. Sensitivity analyses are conducted in the actuarial analysis to evaluate the impact if the experience deviates from the expectation.

It is important to note that scheme-specific assumptions may change after discussions with the stakeholders.

3.1. Data gathering

Collection of the data required to perform the actuarial valuation was carried out by the Department of Social Development of South Africa (DSD) in strong collaboration with the South African Social Security Agency's (SASSA), StatsSA, the Government Employees Pension Fund (GEPF) and the Unemployment Insurance Fund (UIF). Validation of the data received was made by the authors of this report. The data requested included general information on the demography, in particular on the mortality, and economy of South Africa as well as GEPF and UIF specific data.

To distribute the NSSF active contributors by age and sex, the data obtained from GEPF and UIF in 2018 have been used. Those whose age and sex were unknown at the date of valuation have been allocated in proportion to the distribution of insured population aged 15-69, by age and sex. The following section presents the data collection process and the quality of data obtained from GEPF and UIF. It worth mentioning that it is the responsibility of the DSD to ensure that the quality of data used is good.

3.1.1. GEPF

The following items have been obtained from GEPF:

- Audited financial statements for financial year 2018.
- Active contributors' individual information for financial years 2013 to 2018.

Some comments concerning the data collection process and the quality of data include the following:

- The information transmitted by the GEPF concerning the active insured population is good overall in terms of quality. Cross-checking with the audited financial statements highlights no significant inconsistencies[24]. Few issues have been found, e.g. members aged below 15 or over 69 years, or with inconsistent number

[24] The database of GEPF members obtained for this study did not include the categories of contributing members. Such information would have allowed to reconcile with the financial statements as of 31 March 2018. Nonetheless, it was possible to confirm that the data obtained was reasonable and mostly consistent with those used under the Statutory valuation of the Government Employees Pension Fund as at 31 March 2018.

of past credits (e.g. members aged 25 with 30 years of credits). Where statistically appropriate, those members have been distributed according to the age, sex and credit structure of the remaining population.

- The number of GEPF active members considered in this report (1,268,282[25]) differs slightly from the report of the board of trustees reflected in the fund's audited financial statements at the 31 March 2018 (1,273,784). It was impossible for the authors of this report to reconcile those two numbers. The gap observed between these two sources remain marginal.
- Consistency checks have been performed by the authors of this report on the data obtained from GEPF (tests on duplicates, age below 16 or above normal retirement age, missing salaries, etc.). Despite some minor data issues observed within the GEPF database, the authors of this report were satisfied with the general accuracy and completeness of the data provided and with its suitability for the specific purpose of this valuation.

3.1.2. UIF

The following items have been obtained from UIF:

- Audited financial statements for financial years 2015 to 2018.
- Active contributors' individual information in 2015, 2016, 2017 and 2018.

Some comments concerning the data collection process and the quality of data include the following:

- Cross-checking between the audited financial statements of the UIF, the membership databases and the Quarterly Employment Statistics (QES) of StatsSA has highlighted some inconsistencies. The UIF individual data have been adjusted to reflect as much as possible the general observations from both the audited financial statements and the QES. The adjustments made to the UIF individual data include the following: (1) those with full-time monthly salaries below Rnd 2,600 (which correspond approximately to the estimated minimum monthly salary of domestic workers) have been given a monthly salary of Rnd 2,600, and (2) The number of members and well as the densities have been adjusted to reflect that a significant portion of members (mainly low-income members) who leaves and re-enters the scheme each month.
- Other consistency checks have been performed by the authors of this report on the data obtained from UIF (tests on duplicates, age below 16 or above normal retirement age, missing salaries, etc.). Despite some data issues observed within the UIF database, the authors of this report were satisfied with the data provided and with its suitability for the specific purpose of this valuation.

3.2. Data and assumptions

It has been observed in both the GEPF and the UIF that the low-income workers tend to accumulate less contribution months compared to the high-income workers. Because the workers' profile varies significantly by income level, three specific sub-groups of members have been considered in this valuation: the low-income workers, the medium-income workers and the high-income workers. The contributing members have been distributed by age, sex and income level based on the individual data collected from GEPF and UIF. This approach is expected to capture properly the different profiles and characteristics of the workers who will contribute to the scheme.

3.2.1. Distribution of active contributors

The total number of NSSF active contributors would reach about 10.1 million in 2018. Calibration has been done using the latest QES statistics. Smoothing has been applied on resulting distributions in order to eliminate any major statistical bias.

Table 7 presents the distribution of monthly active contributors during year 2018, by age and sex. The insured members have been adjusted slightly to be more consistent with the employed population.

[25] The database obtained from GEPF contained 1,272,301 members who have contributed to the scheme during the financial year 2018. From those 1,272,301 members, 4,019 were deceased as of 31 March 2018. Those members have been excluded from the number of active insured members at 31 March 2018.

Table 7: Distribution of average monthly active contributors during year 2018, by age and sex

Age	Male	Female	Total
15–19	40 312	32 135	72 447
20–24	522 816	362 970	885 786
25–29	930 748	826 614	1 757 363
30–34	950 247	871 656	1 821 902
35–39	797 782	718 235	1 516 017
40–44	667 194	604 705	1 271 899
45–49	547 930	507 356	1 055 286
50–54	427 003	395 417	822 420
55–59	302 655	277 866	580 522
60–64	127 085	102 007	229 092
65–69	31 112	24 221	55 334
Total	**5 344 884**	**4 723 183**	**10 068 067**

Source: GEPF and UIF databases, authors' adjustments.

It was assumed that no member would exceed age 70. In other words, NSSF members are projected to retire no later than age 70.

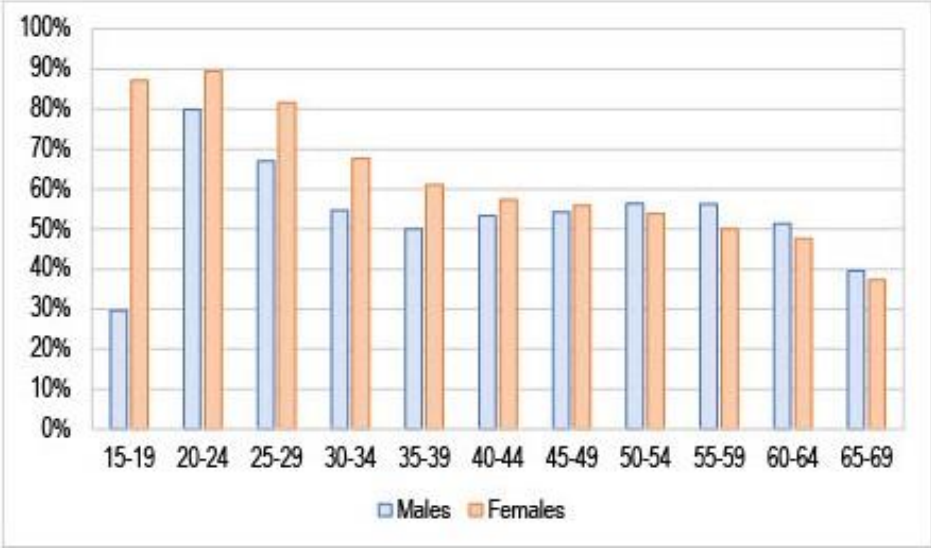
3.2.2. Coverage rate

All covered members of the scheme are formal sector employees.

Figure 29 presents the coverage rates of active contributors in 2018, based on the data from the Quarterly Labour Force Survey of the same year[26], by age and sex. The coverage rate is defined as the ratio of the active contributors to the employed population, by age and sex.

[26] See Chapter 2 for more details on the demographic and economic environment of South Africa.

Figure 29: Coverage rate of active contributors, year 2018, by age and sex



Source: GEPF and UIF databases, authors' adjustments, and employment statistics in South Africa.

In this valuation, it is assumed that the general coverage rate by age and sex will remain unchanged over the projection period. In other words, the number of male and female covered under the scheme will increase at the same pace as the number of male and female employed in South Africa over the projection period.

3.2.3. Salary scale

Monthly salaries for the active insured members were extracted from the individual data transmitted by the GEPF and UIF. Adjustments and smoothing have been applied on the salary distributions obtained in order to eliminate any major statistical bias. Further adjustments have been made to ensure that the estimated distribution of active members during financial year 2018 and the distributions of densities were consistent with the members' contributions received during financial year 2018.

The actuarial model used for this actuarial valuation distributes average salaries into three categories (low, medium and high), with the aim of measuring the effect of the contribution floor, the contribution ceiling and the minimum and maximum pensions, where applicable.

Table 8 presents the distribution of monthly salaries of those who were actively contributing to the scheme in 2018, by age, sex and income level. It is worth noting that the monthly salaries presented below reflect the applicable ceiling of Rnd 23,000 in 2018.

It has been observed that the average full-time salary sometimes decreases with the age in both sectors. This valuation assumes that this pattern will not last: the salary scales of all cohorts of members is projected to gradually evolve over the projection period, increasing at least with the inflation rate each year. Salaries are projected using the assumptions presented in Section **2**.

The salaries displayed in the table have been multiplied by 1.22 to consider the time between the data collection and the date of implementation of the scheme[27].

[27] The data are from the year 2018 and NSSF is expected to be implemented in 2022.

Table 8: Distribution of monthly salaries capped at Rnd 23,000, by age, sex and income level, year 2018 (Rnd)

Age	Males			Females		
	Low	Medium	High	Low	Medium	High
15–19	2 609	3 318	7 575	2 601	3 107	6 681
20–24	2 737	4 583	12 484	2 629	4 065	12 021
25–29	3 141	6 998	18 528	2 747	5 793	18 033
30–34	3 657	9 737	21 634	2 894	7 533	20 761
35–39	4 059	11 687	22 619	2 979	8 798	21 804
40–44	4 328	13 377	22 938	3 024	10 244	22 489
45–49	4 625	15 415	22 998	3 064	11 917	22 897
50–54	4 903	16 778	23 000	3 054	12 655	22 993
55–59	5 027	17 133	23 000	3 089	13 104	23 000
60–64	5 225	16 979	23 000	3 295	13 411	22 996
65–69	4 096	14 537	23 000	2 984	10 054	21 739
Average	**3 929**	**11 216**	**20 769**	**2 928**	**8 839**	**20 497**

Source: GEPF and UIF databases, authors' adjustments.

3.2.4. Density of contribution

The density of contribution represents the number of months of the year during which members pay contributions to the scheme and accrue social security benefits.

As previously mentioned, a significant portion of low-income members leaves or re-enters the scheme each month. It is indeed estimated that each month, about 19 per cent of all members does not actively contribute to the scheme.

Table 9 presents the distributions of density, by age, sex and income level, for the members who were actives as in 2018. The various sets of individual data obtained showed consistent and similar density distributions by age and sex from a year to another. The density of contribution is higher among the high-income earners and significantly lower among the low-income workers. In other words, the low-income earners accrue less contribution months annually than the high-income earners.

As previously mentioned, a significant portion of low-income members leaves or re-enters the scheme each month. It is indeed estimated that each month, about 19 per cent of all members does not actively contribute to the scheme.

Table 9: Average density, by age, sex and income level, active members, 2018 (in month)

Age	Males			Females		
	Low	Medium	High	Low	Medium	High
15–19	4.2	5.2	6.6	4.2	5.0	6.5
20–24	5.1	7.1	8.4	5.0	7.0	8.6
25–29	6.0	8.4	9.6	5.6	8.4	9.9
30–34	6.6	9.1	10.1	6.0	9.2	10.4
35–39	6.9	9.5	10.2	6.1	9.5	10.5
40–44	7.1	9.8	10.3	6.2	9.8	10.7
45–49	7.3	10.0	10.5	6.2	10.0	10.9
50–54	7.5	10.2	10.6	6.1	10.1	11.1
55–59	7.5	10.0	10.4	6.2	10.1	11.0
60–64	7.3	9.3	9.8	6.1	9.6	10.4
65–69	6.5	7.9	8.7	6.0	7.8	8.8
Average	**6.6**	**9.1**	**9.9**	**5.9**	**9.2**	**10.4**

Source: GEPF and UIF databases, authors' adjustments.

3.2.5. Family statistics

Information on the family structure of the insured population is necessary for the projection of survivors' benefits. The NSSF is projected to provide pensions or benefits to surviving dependents.

To assess the probability of having surviving dependents, and estimate the average length of time the survivors' pensions are payable, assumptions were established regarding the probability of being married at the time of death, the average age of spouses, the average number of dependent children and the average age of dependent children. The assumptions used in this valuation have been based on (1) the GEPF statistics collected on members and pensioners' dependents, (2) the most recent census and surveys conducted by StatsSA[28], and (3) the recent trends in terms of fertility rates in South Africa have also been used.

Examples of the assumptions used appear in **Table 10**.

The NSSF survivors' benefit is distributed among the eligible dependents. Once the spouse becomes ineligible to receive the survivors' pension (e.g. for reasons of death or remarriage), his/her pension stops being paid. Once a child becomes ineligible to receive the survivors' pension (e.g. for reasons of death, marriage, attainment of 18 years old, end of school), his/her pension reverts to the remaining eligible children. For simplicity, the projection assumes that the children' pensions will be paid to the youngest children (maximum of two) at a rate of 25 per cent each. The reversion rate in the model has been increased to 28 per cent to take into account the full orphans.

[28] Census 2011: Income dynamics and poverty status of households in South Africa, StatsSA, and StatsSA Survey 2018.

Table 10: Family statistics

Age	Probability of having a spouse (in percentage)		Average age of spouse		Average number of dependent children		Age of the youngest child	
	Male	Female	Male	Female	Male	Female	Male	Female
15	0.0	0.0	15.0	19.0	0.0	0.0	-	-
20	0.0	0.2	16.0	24.0	0.0	0.0	0.3	1.5
25	0.9	2.4	21.0	29.0	0.0	0.0	1.7	2.7
30	8.8	13.3	26.0	34.0	0.0	0.2	3.0	4.7
35	32.7	35.1	31.0	39.0	0.2	0.5	5.2	7.5
40	56.0	53.4	36.0	44.0	0.6	0.8	8.1	11.1
45	65.8	60.8	41.0	49.0	0.9	1.0	11.9	15.0
50	73.1	58.5	46.0	54.0	1.0	0.9	15.4	16.6
55	78.4	56.3	51.0	59.0	0.9	0.7	16.7	16.9
60	82.2	54.3	56.0	64.0	0.6	0.2	16.9	17.7
65	84.2	53.7	61.0	69.0	0.2	0.0	18.0	19.1
70	85.5	51.5	66.0	74.0	0.0	0.0	19.4	21.0
75	88.3	51.3	71.0	79.0	-	-	-	-
80	89.9	50.6	76.0	84.0	-	-	-	-
85	90.0	47.1	81.0	89.0	-	-	-	-
90	87.3	40.1	86.0	94.0	-	-	-	-
95	74.1	32.1	91.0	99.0	-	-	-	-
100	50.9	24.1	96.0	104.0	-	-	-	-

Source: StatsSA
Note: Average number of dependent children excludes any child ineligible to receive benefits because of his/her age. For simplicity, the model assumes that the survivor pension is paid to a maximum of two eligible children at a of 25 per cent each

3.2.6. Invalidity rates

It is difficult to find studies that look at the disability rates of working-age population in South Africa, or disability statistics pertaining to the entire covered population of the upcoming NSSF. The challenges faced for estimating the invalidity rates are numerous. In fact, the eligibility requirements and the ease of access to disability benefits as well as the exact definition of disability are some of the items that vary significantly from a scheme to another, making national and international comparisons difficult, if not impossible.

For this valuation, the invalidity rates have been estimated based on the individual data obtained by SASSA and GEPF. The definition of invalidity coming from those two sources are similar, which contribute to provide a broad picture of disability in the working-age population. SASSA provides a means tested invalidity benefit which is based on persons' income and assets. Those eligible to receive SASSA's benefit are the poorest. Invalidity rates estimated using SASSA's data were used to estimate the invalidity rates applying to the lowest-income members of the NSSF. On the other side, the GEPF is providing ill-health retirement benefits to those working in the government sector (more stable jobs and better income). Invalidity rates estimated using those ill-health retirement rates were used to estimate the invalidity rates applying to government sector employees as well as to private sector employees earning a similar income as those working in the government sector.

Table 11 presents the invalidity rates assumed for males and females in this valuation, by age and sex. Those invalidity rates have been assumed unchanged over the entire projection period.

Table 11: Sample of disability rates, by age and sex (per 1,000)

Age	Males	Females
15	0.3037	0.0014
20	1.3297	1.0140
25	1.6590	1.5336
30	1.9751	2.0659
35	2.3079	2.6674
40	2.9973	3.5841
45	4.1013	4.7304
50	6.0245	6.4877
55	8.7090	8.4885
60	12.7813	11.1694

Source: Authors' assumptions.

3.2.7. Mortality rates of the contributors

Information from GEPF and UIF that is necessary to estimate a mortality Table for the contributors of the NSSF was not enough complete to be used. To overcome the problem, the mortality rates of the contributors have been derived using the paper of JC Clur, RE Dorrington, KA Schriek and PL Lewis: Modelling the mortality of members of group schemes in South Africa. The study concerns the group-scheme members underwritten by South African life insurance companies over the period 2005–2009. This study displays mortality rates, by sex and age, according to 5 salary bands and 3 classes of risks (light, mid and heavy). The salary bands of the study have been actualized to 2018 to help to determine the salary breakdown of the population by age and sex in 2018. The distribution by category of risks have been estimated by using an internal study that has been requested by DSD and made available for this valuation.

The following table displays a sample of the mortality rates.

Table 12: Sample of mortality rates for the contributors, by age and sex (percentage)

Selected ages	Males			Females		
	2022	2061	2100	2022	2061	2100
15	0.103	0.045	0.036	0.053	0.028	0.028
20	0.150	0.071	0.037	0.099	0.028	0.028
25	0.196	0.102	0.042	0.201	0.030	0.028
30	0.302	0.152	0.064	0.275	0.048	0.026
35	0.428	0.206	0.105	0.256	0.088	0.037
40	0.498	0.256	0.142	0.232	0.115	0.109
45	0.556	0.319	0.182	0.241	0.130	0.105
50	0.644	0.411	0.243	0.295	0.150	0.044
55	0.746	0.547	0.345	0.333	0.188	0.029
60	0.852	0.744	0.502	0.360	0.265	0.112
65	1.049	0.988	0.705	0.420	0.375	0.248
69	1.351	1.272	0.942	0.560	0.513	0.371

Source: JC Clur, RE Dorrington, KA Schriek and PL Lewis

3.2.8. Mortality rates of the old age pensioners

The mortality of the pensioners is derived using the Report on pensioner's mortality 2005-2010 from the Actuarial Society of South Africa and the GEPF data.

The following table displays a sample of mortality rates.

Table 13: Sample of mortality rates for the old age pensioners, by age and sex (percentage)

Selected Ages	Males			Females		
	2022	2061	2100	2022	2061	2100
60	1.858	1.623	1.095	0.936	0.690	0.292
65	2.382	2.243	1.601	1.175	1.048	0.693
70	3.512	3.289	2.456	1.848	1.682	1.216
75	5.327	4.849	3.770	3.181	2.801	2.034
80	7.902	7.098	5.720	5.414	4.744	3.571
85	11.499	10.294	8.458	8.984	7.786	5.914
90	19.528	17.463	14.215	17.177	14.417	10.633
95	34.282	30.759	25.029	34.028	28.332	20.722
100	49.049	44.156	36.039	41.293	34.374	25.138
105	58.978	53.699	44.495	50.951	42.837	31.700
110	94.223	92.490	88.472	91.729	87.854	80.330
115	99.999	99.999	99.996	99.999	99.996	99.982
120	100.000	100.000	100.000	100.000	100.000	100.000

Source: Actuarial Society of South Africa and the GEPF data

According to the report on pensioner's mortality 2005-2010 from the Actuarial Society of South Africa, the mortality rates of the pensioners vary according to the level of the pensions. Like in many other societies, those having the highest pensions have the highest life expectancy. To consider this situation, a loading has been introduced in the actuarial valuation. The loading takes the form of an additional adjustment to the pension in payment. It is charged in addition to the inflation. The adjustment is higher at the beginning of the projection and lower by the end with an average level of 0.36 per cent over the projection period.

3.2.9. Mortality rates of disabled members

Although recent censuses and surveys have contributed to improve the understanding of the incidence, prevalence and pattern of disabled persons in South Africa, very little research has been done on the mortality of the disabled in the country. The few recent studies published on the subject still show some limitations explained among others by the fact that the cause-of-death statistics from the civil registrations are not yet of the quality desired. The exact results of those studies remain difficult to use and adapt for this actuarial valuation.

The challenges faced for estimating the disability mortality rates of disabled pensioners are numerous. To be considered to receive a disability pension, a worker must have met the eligibility requirements stated in **Annexure 1:** . This eligibility condition is different from that of SASSA or GEPF. In fact, the eligibility requirements and the ease of access to disability benefits, the differences in the processing of disability pensions as well as the exact definition of disability are some of the items that vary significantly from a scheme to another, making national and international comparisons difficult, if not impossible.

In light of the above-mentioned challenges, the mortality rates of disabled members used in this valuation have been estimated using a simplified approach and are supported by general principles, observations made by the authors of this report and the few studies on disabled mortality in South Africa.

Disabled people face a higher mortality risk than nondisabled people do, especially those who are severely disabled. In the same way, the life expectancy of disabled persons is lower than that of nondisabled persons. Results from the *Estimates of Injury Mortality and Disability based on the Cape Metropole Study*[29] suggest that disability could reduce the residual life expectancy of a person by 20 to 40 per cent[30], depending on a person age and sex. Another study incorporating a broader definition of disability, Disability in South Africa[31], shows that the residual life expectancy of a working-age disabled person could be reduced by 10 to 25 per cent compared to a disability-free person of the same age and sex. Taking into account the above-items, as well as the relatively low sensitivity of the assumption pertaining to mortality rates of disabled members, it was assumed that the residual life expectancy of newly disabled members would be reduced by 17 to 23 per cent compared to nondisabled members of the same age and sex. **Table 14** summarizes the disabled members' mortality parameters used for this actuarial valuation.

Table 14: Sample of mortality parameters used for disabled members, by age and sex

Age (x)	Male			Female		
	qx	Life Expectancy (LE)	% of LE lost Due to Disability	qx	Life Expectancy (LE)	% of LE Lost Due to Disability
20	0.00423	41.8	18.5	0.00254	48.0	17.5
25	0.00590	37.8	19.4	0.00448	43.7	18.4
30	0.00825	34.0	20.3	0.00678	39.9	19.1
35	0.01066	30.5	21.2	0.00843	36.3	19.5
40	0.01270	27.2	22.0	0.00922	32.8	19.6
45	0.01512	23.9	22.7	0.00984	29.3	19.6
50	0.01863	20.8	23.2	0.01101	25.7	19.7
55	0.02206	17.7	23.3	0.01175	22.1	20.0
60	0.02845	14.7	23.3	0.01420	18.3	20.6
65	0.03905	11.8	23.4	0.02065	14.7	21.8
70	0.05459	9.2	24.7	0.03269	11.3	23.6
75	0.08130	6.8	28.1	0.05438	8.3	26.7
80	0.12902	4.8	33.6	0.09347	5.7	31.0
85	0.21261	3.1	40.1	0.16863	3.6	36.8
90	0.37392	1.8	45.1	0.32993	2.1	41.4
95	0.61050	1.1	48.8	0.55714	1.2	43.0
100	0.79953	0.7	51.0	0.70193	0.9	49.5

Source: Authors' assumptions.

[29] Norman R. Estimates of Injury Mortality and Disability based on the Cape Metropole Study, Cape Town: South African Medical Research Council, 2002.

[30] Those estimates were derived from the Disability-adjusted life years, the Years of life lost due to premature mortality and the Years of life lost due to premature mortality. This study highlights the heavy injury burden.

[31] Heston Phillips & Amadou Noumbissi: Disability in South Africa, 2004

3.3. Other assumptions

This section discusses other assumptions used in this valuation:

3.3.1. Projected contribution rate

A contribution rate of 10 per cent has been assumed on the insurable earnings starting in financial year 2022 (the assumed implementation year of the fund) to project the contribution income and the scheme's projected reserve.

3.3.2. Administrative expenses and other expenses

The overall administrative expenses, including expenditure other than benefits, have been assumed at 0.25 per cent of the total insurable earning over the projection period.

3.3.3. Investment rate

The annual rate of return on assets, net of fees, has been projected at 3.5 per cent in real term over the projection period.

3.3.4. Early retirement factors

The normal retirement age is 65 but a worker can retire as early as age 60. Adjustment to the pension is brought for those taking their retirement before the normal retirement age to reflect the fact that they will receive a pension, on average, over a longer period of time. The adjustment of the pension is 0.6 per cent for each month before the retirement age. If someone takes its retirement age after the normal retirement age, the pension is increased by 0.7 per cent for each month after the retirement age.

3.3.5. Retirement rates

At the start of the projection, the number of members who leave to retirement each year is derived by the coverage rates. The proportion of those who will retire at age 60 is increased gradually during the first 50 years of projection to recognize the fact that it will take a generation of contributors so that people will retire with a full career. The following table presents an overview of the implicit retirement rates derived from the coverage rates over the projection period, by age and sex. The average retirement rate is 63.8 for male and 63.6 for female in 2022 while it is respectively 62.9 and 62.8 50 years later.

Table 15: Implicit retirement rates derived from the coverage rates, by age and sex, 2022 and 2072

Age	Males_2022	_Males_2072	Females	Females_2072
60	25.0%	50.0%	30.0%	60.0%
61	10.0%	10.0%	15.0%	15.0%
62	10.0%	10.0%	5.0%	5.0%
63	15.0%	15.0%	15.0%	15.0%
64	20.0%	20.0%	20.0%	20.0%
65	40.0%	40.0%	40.0%	40.0%
66	30.0%	30.0%	25.0%	25.0%
67	10.0%	10.0%	10.0%	10.0%
68	10.0%	10.0%	10.0%	10.0%
69	10.0%	10.0%	10.0%	10.0%
70	100.0%	100.0%	100.0%	100.0%

4. DEMOGRAPHIC AND FINANCIAL PROJECTIONS OF THE NSSF

This part of the valuation deals with the ability of the social security scheme to meet its future obligations at the time they fall due. This is done under three approaches:

1. **Open group**: it is assumed that all the workers of the formal sector will continue to be insured with NSSF indefinitely, thus paying contributions and accruing benefit entitlements, and later receiving benefits. The period used should be long enough to see stability in the contribution rate (PAYG).
2. **Closed group**: workers who are in the scheme on the implementation date will pay a contribution rate that is necessary to finance their own benefits.
3. **Open and closed group**: over a period, for example 50 years, the projection considers both the workers who are in the scheme on the implementation date as well as new entrants. After that period, no new entrants are considered. The contribution rate is the one necessary to finance entirely the benefits of all the people in the projection.

Future contributions and benefits are calculated according to the demographic and economic assumptions and the fund-specific assumptions presented in Chapters 2 and 3.

The general methodology of the ILO valuation model is described in **Annexure 2**. For the present study, a basic scenario was produced based on best-estimate assumptions. Also, additional scenarios were made to better understand major factors that have an impact on the financial soundness of NSSF, to assess uncertainties related to the assumptions used and to analysed the impact of potential modifications to the provisions of the scheme.

The main purpose of an actuarial valuation is to find out whether the financing of NSSF will be on course over the long-term, not to exactly forecast numerical values. Due to the long-term nature of assumptions and to the fact that no experience of the scheme is available, absolute figures include a high degree of uncertainty. Therefore, results should be interpreted carefully, and future actuarial reviews should be undertaken on a regular basis to revise actuarial assumptions considering the actual experience of the scheme.

In this section, the contribution rate is applied to the total insurable earnings. In a next section, special features like the exemption of the contribution rate on a floor are considered.

4.1. Open group

4.1.1. Demographic projections

Demographic projections are shown in **Table 16**. The table shows the demographic ratio which is defined as the number of pensioners divided by the average monthly number of contributors. **Figure 30** also shows the projection of the demographic ratio for Old Age, Disability and Survivors benefits. The trend in the ratio of pensioners to contributors is normally a good indicator of the increasing cost of the scheme. The total number of contributors follows a rate of growth derived from the projections of South Africa's national population, labour force and employed population as described in Chapter 2. There are no pensioners at the beginning of the projection, but their number grows rapidly during the projection period. Thus, the ratio of all pensioners (Old Age, Invalidity and Survivors) to contributors (demographic ratio) grows from 0 to 129 per cent in 2097 and 170 per cent in 2177. In other words, there will be 0.6 contributors for each pensioner in 155 years. The reader should however be careful with these figures. The number of contributors in the table refers to the average monthly number of contributors. All the contributors will not contribute 12 months a year. In fact, on average they contribute 8.3 months a year. It means that during a year, there are more people effectively contributing to the scheme. So, if the demographic ratio was presented as the ratio of pensioners to the total number of contributors during a year, the demographic ratio would have been considerably lower. In fact, at the end of the projection it would have been 117 instead of 170[32]. The way to present the demographic ratio is not affecting the financial results. As mentioned previously, this is the trend in the demographic ratio which is important and behind of the trend in the cost.

[32] According to the preliminary design, if a contributor pays contributions for only one month, he will deserve a pension. So, on retirement, there will be many workers with low number of years of service and small pensions.

Figure 30: Demographic ratio: Number of pensioners divided by the number of contributors, 2022-2177

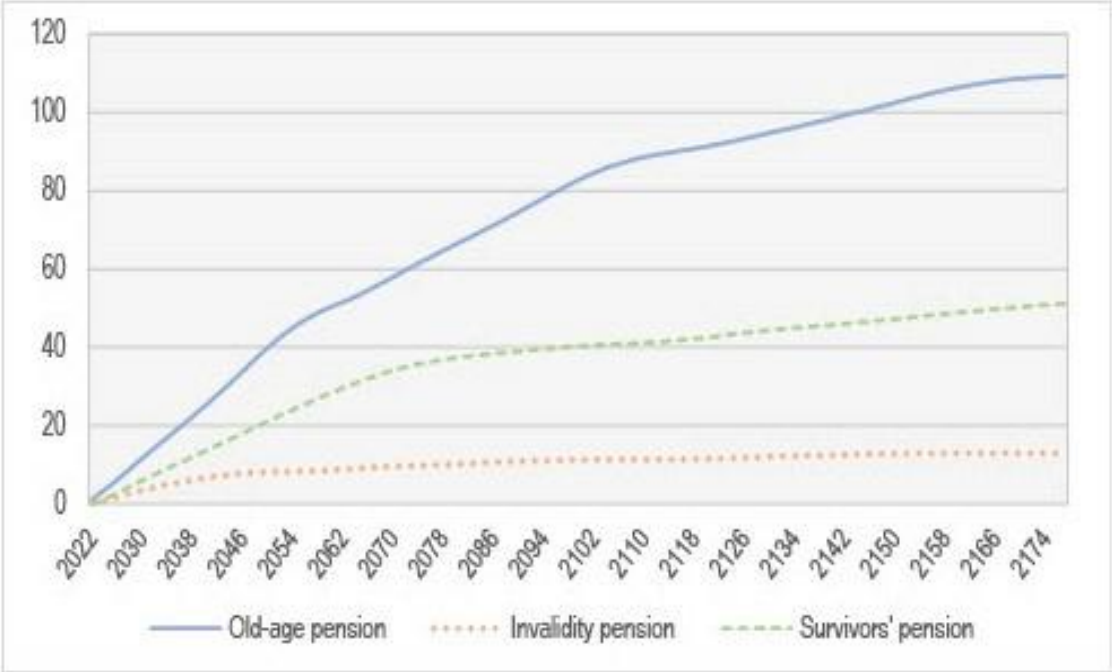


Table 16: Demographic projections, 2022-2177

Years	Numbers of active members and beneficiaries					Demographic ratio (pension) (in %)		
	Actives	Old-age	Invalids	Survivors				
		Pension	Pension	Pension	Funeral benefit	Old-age	Invalids	Survivors
2022	10 350 213	125 187	0	0	0	1.2	0.0	0.0
2027	11 196 143	837 574	249 044	201 847	20 071	7.5	2.2	1.8
2032	12 130 171	1 736 878	515 842	525 875	51 229	14.3	4.3	4.3
2037	13 022 034	2 724 251	763 147	977 173	90 922	20.9	5.9	7.5
2042	13 904 983	3 874 101	989 514	1 554 250	140 185	27.9	7.1	11.2
2047	14 715 929	5 213 761	1 164 666	2 230 669	197 276	35.4	7.9	15.2
2052	15 428 873	6 563 298	1 270 063	2 953 359	255 464	42.5	8.2	19.1
2057	15 977 685	7 656 057	1 342 481	3 658 855	306 817	47.9	8.4	22.9
2062	16 303 548	8 400 479	1 428 239	4 303 582	349 824	51.5	8.8	26.4
2067	16 470 596	9 122 326	1 534 400	4 854 547	387 059	55.4	9.3	29.5
2072	16 549 190	9 876 004	1 602 115	5 283 004	418 351	59.7	9.7	31.9
2077	16 553 103	10 570 925	1 650 645	5 572 722	441 818	63.9	10.0	33.7
2087	16 407 389	11 808 874	1 755 724	5 876 719	473 153	72.0	10.7	35.8
2097	16 275 289	13 124 815	1 822 896	6 116 821	506 381	80.6	11.2	37.6
2107	16 174 460	14 127 062	1 827 584	6 269 119	556 244	87.3	11.3	38.8
2117	16 008 930	14 475 351	1 826 114	6 375 653	590 066	90.4	11.4	39.8
2127	15 469 354	14 480 597	1 839 421	6 432 445	604 346	93.6	11.9	41.6
2137	14 855 277	14 456 414	1 837 457	6 384 223	602 968	97.3	12.4	43.0

2147	14 287 002	14 457 187	1 822 014	6 328 724	599 815	101.2	12.8	44.3
2157	13 735 099	14 456 114	1 775 530	6 303 293	599 240	105.2	12.9	45.9
2167	13 198 453	14 265 645	1 705 948	6 258 892	595 445	108.1	12.9	47.4
2177	12 689 888	13 857 637	1 639 805	6 170 227	586 235	109.2	12.9	48.6

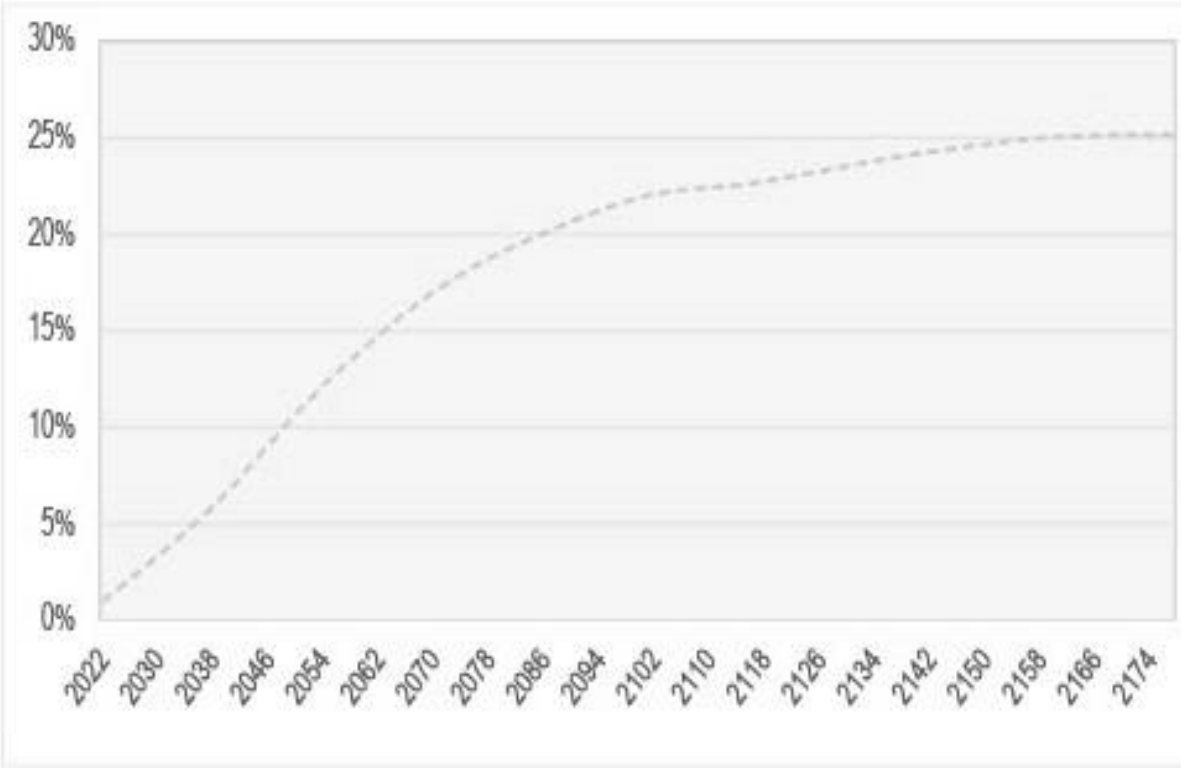
4.1.2. Financial projections

As shown in **Figure 31**, total expenditure as a percentage of insurable earnings (which is called the Pay-As-You-Go (PAYG) rate) rises from 0.3 per cent in 2022 to 21.2 per cent in 2097 and 25.2 per cent in 2177. The PAYG rate represents the contribution rate that would be required to pay all the expenditures of the scheme (benefits, administrative and other expenses), year after year, in the absence of a reserve (investment). This high increase in the PAYG rate is mainly due to the increase in the demographic ratio, as explained in the previous section. In fact, there are more and more pensioners receiving benefits, with more years of service, while the number of contributors is not growing as fast.

Table 17 shows the results of the financial projections for cash flows and reserves. In the base scenario, the contribution rate is 10 per cent. The main observations are as follow:

1. Annual contributions are sufficient to pay for all annual expenditures (benefits and administrative expenditures) until 2051.
2. Starting in 2052, investment income must be used to pay for annual expenditures. Contributions and investment income are not enough to pay all the expenditure throughout the projection period.
3. In the year 2091, contributions and investment incomes are no longer enough to pay the expenditures. The reserve starts to decrease.
4. In the year 2104, the reserve is depleted. At this moment, the PAYG rate is 22.0 per cent.

Figure 31: Projected PAYG rates, 2022-2177 (percentage of insurable earnings)



The reserve ratio, which is the ratio of the end-of-year reserve over the annual expenditures for the year, moves from 40 to 0 in 2104. This ratio can be interpreted as the number of years during which annual expenditures could be paid by the reserve if there were no contributions, no investment income and no other income. The evolution of the reserve ratio is illustrated in **Figure 32**.

Figure 32: Projected reserve ratio, 2022–2122

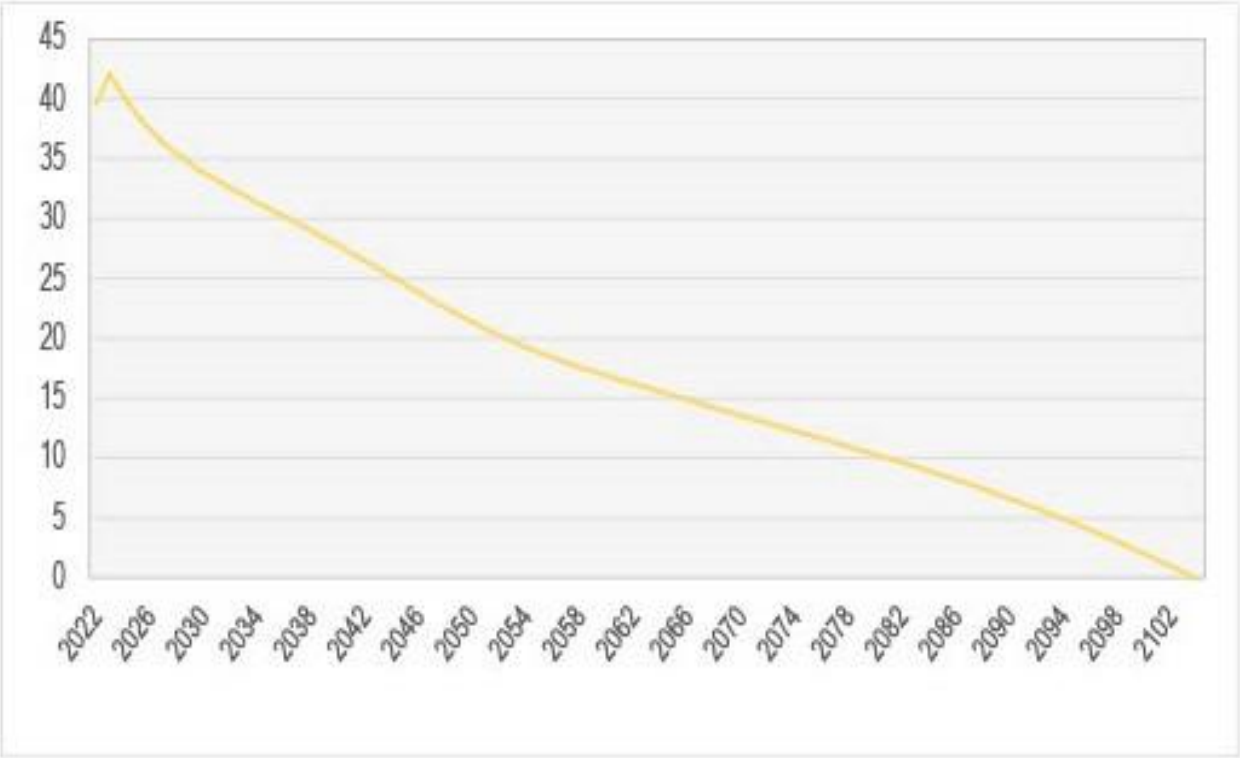


Table 17: Financial projections: Cash inflows, cash outflows and reserve, 2022-2177, contribution rate = 10% (Rand millions)

Years	Income			Expenses		Reserve at the end of the year	PAYG (%)	Reserve ratio
	Contributions	Investment earnings	Benefits	Administrative expenses	Surplus / (Deficit)			
2022	170 821	6 656	99	4 271	173 107	173 107	0.3	39.6
2027	244 143	98 518	32 699	6 104	303 859	1 410 903	1.6	36.4
2032	348 952	252 829	97 996	8 724	495 061	3 475 659	3.1	32.6
2037	494 057	496 839	214 658	12 351	763 887	6 723 562	4.6	29.6
2042	693 601	863 301	419 413	17 340	1 120 149	11 577 152	6.3	26.5
2047	962 849	1 385 029	770 959	24 071	1 552 847	18 449 174	8.3	23.2
2052	1 324 112	2 088 867	1 332 460	33 103	2 047 416	27 674 441	10.3	20.3
2057	1 802 055	2 998 150	2 154 029	45 051	2 601 124	39 549 042	12.2	18.0
2062	2 420 988	4 135 347	3 289 031	60 525	3 206 780	54 355 765	13.8	16.2
2067	3 219 998	5 507 296	4 873 292	80 500	3 773 502	72 135 459	15.4	14.6
2072	4 258 251	7 074 847	7 037 188	106 456	4 189 453	92 331 994	16.8	12.9
2077	5 606 377	8 752 769	9 917 556	140 159	4 301 431	113 780 674	17.9	11.3
2087	9 626 095	11 598 683	18 781 051	240 652	2 203 075	148 993 077	19.8	7.8
2097	16 520 250	10 019 405	34 662 780	413 006	-8 536 132	123 384 225	21.2	3.5
2107	28 389 235	-7 675 656	62 293 738	709 731	-42 289 890	-119 415 263	22.2	-1.9
2117	48 610 024	-70 372 644	108 353 145	1 215 251	-131 331 016	-964 123 436	22.5	-8.8
2127	81 366 225	-247 959 982	186 100 365	2 034 156	-354 728 279	-3342 047 111	23.1	-17.8

2137	135 380 842	-707 538 894	318 800 880	3 384 521	-894 343 453	-9476 249 152	23.8	-29.4
2147	225 580 221	-1836 473 871	544 212 605	5 639 506	-2160 745 760	-24514 492 526	24.4	-44.6
2157	375 725 248	-4518 174 124	923 668 138	9 393 131	-5075 510 145	-60189 054 509	24.8	-64.5
2167	625 511 760	-10743 022 987	1554 221 234	15 637 794	-11687 370 255	-142919 493 414	25.1	-91.0
2177	1041 958 960	-24957 178 956	2596 279 143	26 048 974	-26537 548 113	-331704 366 191	25.2	-126.5

4.2. Closed group

If the workers who are members of the NSSF in 2022 are required to pay for their own benefits, their contribution rate would be 13.0 per cent.

Under this approach, the contribution rate is equal to the to the Present Value of Future Benefits (PVFB) divided by the Present Value of Future Salaries (PVFS). The projections are done assuming that:

1. There are no new entrants to the scheme beyond the valuation date.
2. Insured members accumulate additional service beyond the valuation date.
3. Salaries of members at the valuation date are projected according to the assumptions related to increases in salary. Those projected salaries will become the basis to calculate their pension once they retire, die or become invalid.

There are elements in this approach that are putting unnecessary upward pressure on the contribution rate:

1. Many workers are aged on the valuation date, and a complete career is not considered to calculate the pension (and contribution) like it will be the case with future generation of workers.
2. The price of some features, like the minimum pension, are expensive because, the workers at the start of the plan, have not yet contributed to the scheme.

4.3. Open and Closed group

This approach is a mix the two preceding ones. Instead on looking only at one generation of contributors, it encompasses more generations. It aims to have a fully funded pension scheme, like in the preceding exercise, but by considering more generations, which is part of the quintessence of a social security pension scheme. Under this approach, an open group approach is used for the first 50 years of the projection. After 50 years, no more new entrants are considered in the projections and the members become part of a closed group. The contribution rate that is necessary is calculated like in the preceding section and is equal to the Present value of future benefits (PVFB) divided by the Present value of future salaries (PVFS) over the projection period.

The contribution rate under this approach is 12.0 per cent. This is the approach that is recommended to calculate the fully funded portion of the new NSSF.

The following table shows the results of the projection with a 12.0 per cent contribution rate. Unlike the scenario with a 10 per cent contribution rate, there are assets at the end of the projection. The reserve ratio is 20.1 in 2177.

Table 18: Financial projections: Cash inflows, cash outflows and reserve, 2022-2177, contribution rate = 12% (Rand millions)

Years	Income			Expenses		Reserve at the end of the year	PAYG (%)	Reserve ratio
	Contributions	Investment earnings	Benefits	Administrative expenses	Surplus / (Deficit)			
2022	204 481	8 002	99	4 271	208 114	208 114	0.3	47.6
2027	292 253	119 692	32 699	6 104	373 142	1 716 161	1.6	44.2
2032	417 715	311 624	97 996	8 724	622 619	4 290 262	3.1	40.2
2037	591 413	622 932	214 658	12 351	987 337	8 445 022	4.6	37.2
2042	830 278	1 105 010	419 413	17 340	1 498 535	14 851 574	6.3	34.0
2047	1 152 582	1 819 675	770 959	24 071	2 177 227	24 308 733	8.3	30.6
2052	1 585 033	2 838 434	1 332 460	33 103	3 057 904	37 745 705	10.3	27.6
2057	2 157 157	4 252 954	2 154 029	45 051	4 211 031	56 367 094	12.2	25.6
2062	2 898 054	6 189 167	3 289 031	60 525	5 737 665	81 829 868	13.8	24.4
2067	3 854 511	8 809 867	4 873 292	80 500	7 710 587	116 246 599	15.4	23.5
2072	5 097 356	12 311 293	7 037 188	106 456	10 265 005	162 188 022	16.8	22.7
2077	6 711 136	16 962 827	9 917 556	140 159	13 616 248	223 198 225	17.9	22.2
2087	11 522 955	31 268 532	18 781 051	240 652	23 769 784	410 755 894	19.8	21.6
2097	19 775 630	56 000 089	34 662 780	413 006	40 699 934	734 685 980	21.2	20.9
2107	33 983 447	98 014 764	62 293 738	709 731	68 994 742	1284 749 766	22.2	20.4
2117	58 188 822	169 683 939	108 353 145	1 215 251	118 304 366	2223 587 897	22.5	20.3
2127	97 399 763	292 359 832	186 100 365	2 034 156	201 625 075	3830 042 263	23.1	20.4

2137	162 058 176	500 175 087	318 800 880	3 384 521	340 047 862	6550 017 232	23.8	20.3
2147	270 031 702	849 255 733	544 212 605	5 639 506	569 435 325	11117 338 317	24.4	20.2
2157	449 763 404	1432 033 046	923 668 138	9 393 131	948 735 181	18740 450 191	24.8	20.1
2167	748 771 343	2402 826 820	1554 221 234	15 637 794	1581 739 134	31439 666 908	25.1	20.0
2177	1247 281 122	4025 562 505	2596 279 143	26 048 974	2650 515 509	52672 554 831	25.2	20.1

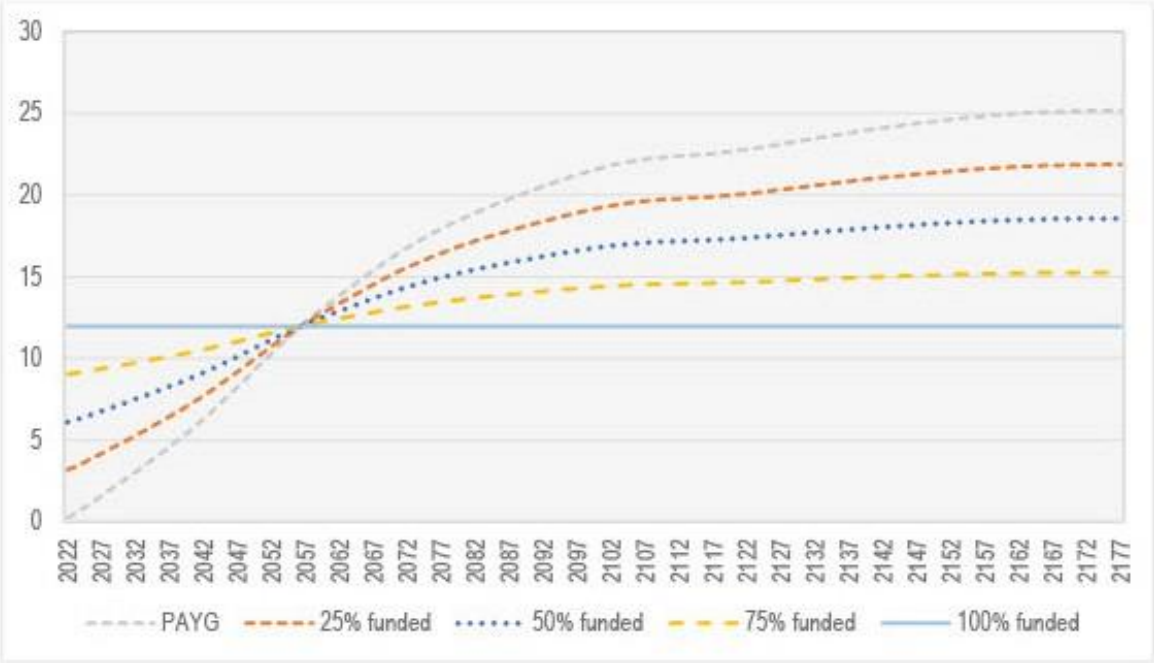
4.4. The funding policy: a mix of two approaches

The next Figure regroups together the results of the pure PAYG method (no accumulation of a reserve) with the one of the fully funded method under different level of funding objectives. This exercise is the foundation behind the thinking of the proposed funding policy for the new NSSF. It is based on the relation that a social security pension scheme which is targeting a funding ratio of 25 per cent is the same as one where 25 per cent of the benefits are fully funded and 75 per cent are not funded (based on the pure PAYG methodology). This mix of two approaches allows decision makers to:

1. Define a funding level and establish appropriate measures and rules to maintain it.
2. Always be able to attach the maximum contribution rate related to a funding strategy. This is sustainability part of the funding strategy.

According to the **Figure 33**, the maximum contribution rate over the 155 years projection period goes from 12 per cent to 25.2 percent depending on the funding strategy chosen.

Figure 33: Mix of funding strategy, 0% funded (PAYG), 25% funded, 50% funded, 75% funded and fully funded



The pitfall of such approach is that, unless the fully funded approach is chosen, the contribution rate will increase each year because of the component of the scheme which is under the PAYG approach. It is important to remind that in a pure PAYG system; the contribution rate increases each year to finance the upward trend in the expenditures. Annual increases in the contribution rate makes the process administratively complicated. It is however possible to overcome the situation by adopting a system based on the Scaled Premium (SP) approach instead of a pure PAYG system. Difference between a PAYG system and a SP system is explained in Annex 3. The following figure explains the concept. Instead of adopting a pure PAYG (the blue line), policy makers are adopting the SP approach (the orange line). The SP approach allows the contribution rate to be maintained without increase for a reasonable period. In this example, it has been decided to not change the contribution rate for the first 25 years. After the 25 years, the contribution rate is increased each 15 years according to the schedule presented in **Table 19**. The ultimate contribution rate under a SP system is going to be lower than the one of a pure PAYG system because of the presence of a small amount of reserve as explained in Annexure 3.

In this example, the funding policy is targeting a minimum funding ratio of 25%. To reach this objective, the legal contribution rate is going to be a mix of the fully funded approach and the SP approach, as presented in the **Table 19**. In the long run, such strategy gives a reserve ratio (the yellow sticks) that is a little bit higher than 5.

Figure 34: Funding strategy 25% funded with a SP approach

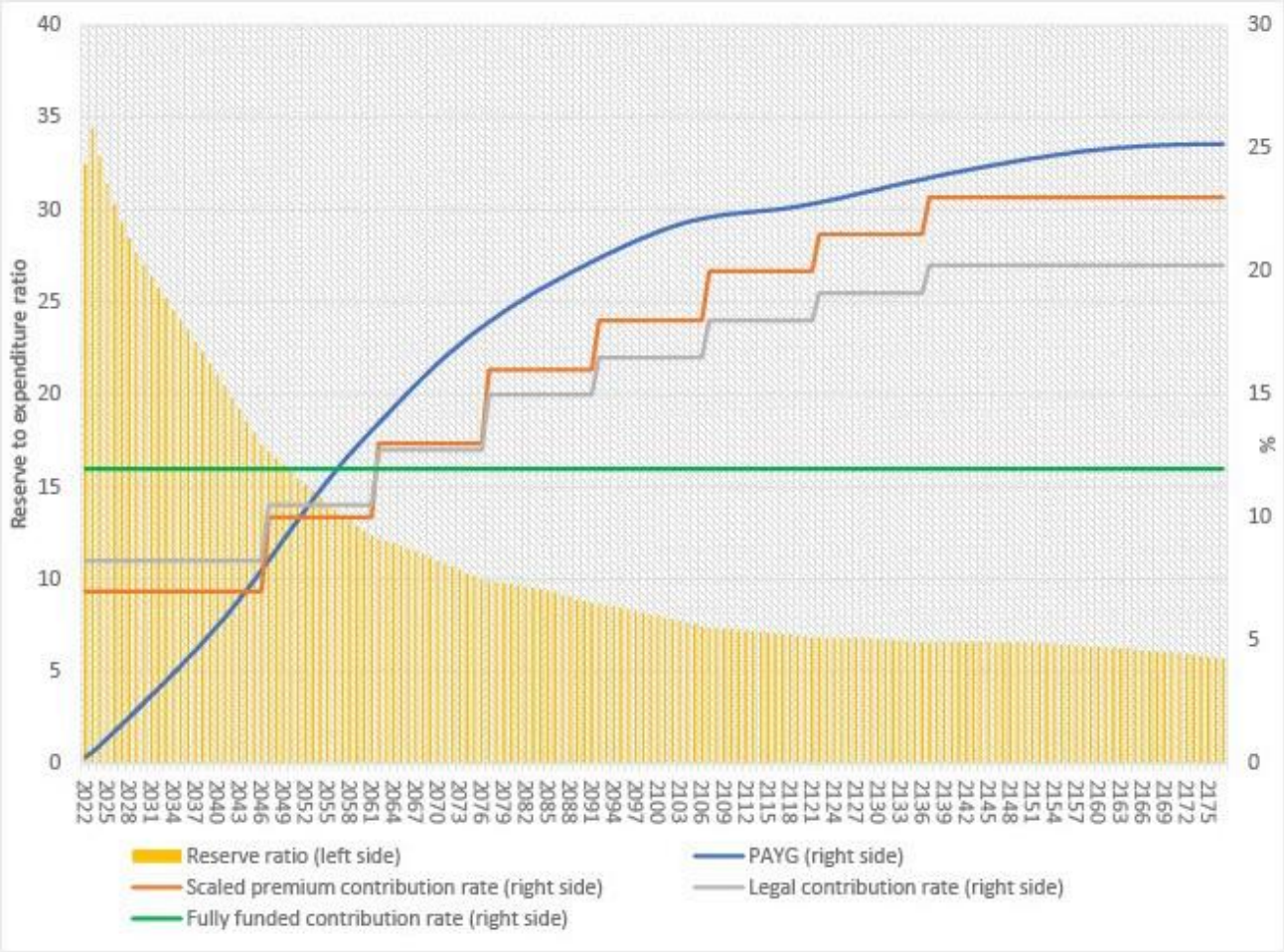


Table 19: Contribution rate, 2022-2177, Scaled premium approach, fully funded approach, and targeted contribution rate in the funding policy, percentage

	Scaled Premium (A)	Fully Funded (B)	Targeted contribution rate (funding policy) 75% x A + 25% x B
2022–2046	7.0	12.0	8.2
2047–2061	10.0	12.0	10.5
2062–2076	13.0	12.0	12.7
2077–2091	16.0	12.0	15.0
2092–2106	18.0	12.0	16.5
2107–2121	20.0	12.0	18.0
2122–2136	21.5	12.0	19.1
2137–2177	23.0	12.0	20.2

Under the basic scenario, a contribution rate of 12.0 per cent is necessary to pay all the expenditures under a full funding approach. This chapter discusses some other scenarios to better understand the risks a new pension scheme like NSSF may face.

In addition to the full funding approach, impacts for each scenario on the PAYG rate in 25 years, 50 years and at the end of the projection as well as on the year the reserve will be zero with a 10 per cent contribution rate are also shown. This section is divided in two: sensitivity tests on the assumptions and sensitivity tests on policy options.

4.5. Sensitivity tests on assumptions

4.5.1. Return of the Fund

The assumption concerning the real return on assets in the base scenario is 3.5 per cent for all the projection years. **Table 20** shows the impact of having a return 0.5 per cent lower and 0.5 per cent higher than in the base scenario. A change in the return on assets has no impact on the PAYG rate, because when calculating this rate, the amount of reserve is not considered.

Table 20: Sensitivity analysis: Return of the Fund (percentages)

Scenarios	Full funding	PAYG 2046	PAYG 2071	PAYG 2171	Year reserve = 0
Base	12.0	7.8	16.5	25.1	2104
+0.5%	10.8	7.8	16.5	25.1	2124
–0.5%	13.3	7.8	16.5	25.1	2095

Note: The year the reserve is depleted is calculated with a contribution rate of 10 per cent.

With a lower return on assets of 0.5 per cent, the reserve will be zero in 2095, nine years earlier than in the base scenario. The impact on the full funding contribution rate is particularly important.

4.5.2. Inflation rate

For this actuarial valuation, the assumed inflation rate is 4.5 per cent for all the projection years. The next scenarios show the impact on the projection of a change of plus or minus 0.5 per cent in the rate of inflation (**Table 21**). This section also presents a test as if the inflation rate will remain at its level when this report was prepared. The assumption regarding the inflation rate affects many variables in the actuarial valuation: adjustment to pensions in payment, salary growth and return on investment. According to the projections, inflation is not the biggest risk, if all other variables move in parallel to the inflation as assumed in this sensitivity test.

Table 21: Sensitivity analysis: Inflation rate (percentages)

Scenarios	Full funding	PAYG 2046	PAYG 2071	PAYG 2171	Year reserve = 0
Base	12.0	7.8	16.5	25.1	2104
+0.5%	11.9	7.8	16.4	25.0	2105
–0.5%	12.0	7.9	16.6	25.3	2103
Inflation = 3%	12.1	8.0	16.8	25.5	2102

Note: the year the reserve is depleted is calculated with a contribution rate of 10 per cent.

4.5.3. Salary Increase

Very often in pension plans, pensions are indexed annually according to the increase in the Consumer Price Index (CPI) while salaries increase faster according to the inflation plus a productivity component. The fact that the annual increase in salaries is higher than the pension adjustment has the effect of lowering the PAYG cost because the basis to calculate contributions increases more rapidly than the average amount of benefits. For the full funding approach, the impact is in the opposite direction: for the someone who is contributing, a higher salary increase means a bigger pension and consequently, a higher cost. For this actuarial study, it is assumed that pensions in payment will increase according to the inflation.

What is important in an actuarial valuation is the relation between the salary increase and the benefit increase. In our base scenario, it is expected that, in the long run, increase in the average salary will be 1.1 per cent higher than the inflation rate. A sensitivity analysis has been produced to show the financial impact of an increase in real salaries that is 0.5 per cent higher or lower than the one in the base scenario. The following table shows the results.

Table 22: Sensitivity analysis: Salary increase (percentages)

Scenarios	Full funding	PAYG 2046	PAYG 2071	PAYG 2171	Year reserve = 0
Base	12.0	7.8	16.5	25.1	2104
+0.5%	12.5	7.5	15.6	23.4	2102
–0.5%	11.5	8.2	17.6	27.1	2107

Note: the year the reserve is depleted is calculated with a contribution rate of 10 per cent.

4.5.4. Fertility rate

Over the long-term, the PAYG rate is extremely sensitive to the assumption related to fertility rate which affects the growth of the insured population. In the base scenario, the fertility rate drops from 2.33 in 2018 to 1.85 in 2059 and stays at this level for the rest of the projection.

Two sensitivity analyses are done by assuming lower and higher fertility rate.

1. Low fertility growth scenario: the fertility rate has been decreased to reach 1.4 in the long run.
2. High fertility growth scenario: the fertility rate is assumed to decrease to reach 2.1 in the long run.

Under the base scenario, the average annual growth rate over the projection period of the insured population is 0.2 per cent. Under the low fertility growth and high fertility growth scenarios, the average annual growth rate is respectively -0.3 per cent and 0.3 per cent.

Depending on the degree of funding of the scheme, the cost can be sensitive to the assumption related to insured population growth. The PAYG rate at the end of the projection period is significantly affected by this assumption.

Table 23: Sensitivity analysis: Fertility rate (Insured population growth) (percentages)

Scenarios	Full funding	PAYG 2046	PAYG 2071	PAYG 2171	Year reserve = 0
Base	12.0	7.8	16.5	25.1	2104
High fertility	11.9	7.8	16.5	21.0	2104
Low fertility	12.1	7.8	16.5	34.1	2104

Note: the year the reserve is depleted is calculated with a contribution rate of 10 per cent.

It is important to understand the impact of population growth for a pension scheme. Higher population growth means that there are more people available to pay for benefits. This has the effect of delaying the ultimate cost of a pension plan by lowering the PAYG rate over the projection period, as shown in **Table 24**. The opposite applies to the lower growth scenario. According to these scenarios, the PAYG rate at the end of the projection period for low growth and high growth are 34.1 and 21.0 per cent, respectively. There is also no material impact on the full funding rate. This sensitivity analysis illustrates clearly one of the most important risks of social security systems that are pure PAYG.

4.5.5. Mortality rates

In the base scenario, at the start of the projection, the life expectancy at age 60 is 18.6 and 22.6 for males and females, respectively. 100 years later, it will increase to 21.8 and 26.5. The next scenarios show the impact on the projection of mortality rates that are 15 per cent higher or lower than the best-estimate assumption. If 85% of the

mortality rates is used, the life expectancy at age 60 will increase by about 1.4 years. 115% of the mortality decreases the life expectancy at age 60 by about 1.2 years.

Table 24: Sensitivity analysis: Mortality rates (percentages)

Scenarios	Full funding	PAYG 2046	PAYG 2071	PAYG 2171	Year reserve = 0
Base	12.0	7.8	16.5	25.1	2104
High mortality	11.7	7.9	16.1	24.2	2107
Low mortality	12.3	7.8	17.0	26.3	2101

Note: the year the reserve is depleted is calculated with a contribution rate of 10 per cent.

4.5.6. Density of contributions

The density of contribution represents the proportion of the year during which members pay contributions to the scheme. The density of contributions affects the number of years of service accrued by the members which is used in the calculation of the pension. The number of years of service is also used to verify if members qualified or not to a pension. One of the reasons explaining the low density of contributions in South Africa is the high unemployment rate. In the base scenario, the workers are contributing 8.3 months per year on average. Two sensitivity analyses have been produced:

1. by increasing the density of contributions by 15% (the average number of months of contribution increases to 9.5).
2. by decreasing the density of contributions by 10% (the average number of months of contribution decreases to 7.5).

The sensitive test shows that there is additional pressure on the cost of a pension scheme when there are no eligibility conditions, and the density of contributions is high.

Table 25: Sensitivity analysis: Density of contributions (percentages)

Scenarios	Full funding	PAYG 2046	PAYG 2071	PAYG 2171	Year reserve = 0
Base	12.0	7.8	16.5	25.1	2104
High density	11.5	7.5	16.0	24.1	2112
Low density	12.5	8.3	17.2	26.1	2096

Note: the year the reserve is depleted is calculated with a contribution rate of 10 per cent.

4.5.7. No changes in the employment variables

In the base scenario, the global labour force participation rate increases in the first part of the projection period (from 58.9 per cent in 2022 to 61.9 per cent in 2050) while it decreases in the second part to reach 60.6 per cent in 2100. In the long run, the unemployment rate is assumed to decrease from 29.6 per cent to 13.3 per cent. A sensitivity analysis is produced assuming that the current labour force participation rates as well as the employment rates by sex and single ages are going to stay at their current level (at the time of writing this report) throughout the projection period.

Table 26: Sensitivity analysis: No changes in the employment variables (percentages)

Scenarios	Full funding	PAYG 2046	PAYG 2071	PAYG 2171	Year reserve = 0
Base	12.0	7.8	16.5	25.1	2104
No changes in the employment variables	12.0	8.6	19.0	23.8	2097

Note: the year the reserve is depleted is calculated with a contribution rate of 10 per cent.

4.5.8. Gradual increase of the coverage

In the base scenario, it is assumed that 100 per cent of the workers of the formal sector are going to be insured by the new NSSF in 2022. In this scenario, it is assumed a slower implementation of the scheme: in 2022, 2/3 of the potential members are covered by NSSF and the coverage rate will increase linearly to 100 percent over the first 10 years of existence of the scheme.

Table 27: Sensitivity analysis: Gradual increase of the coverage (percentages)

Scenarios	Full funding	PAYG 2046	PAYG 2071	PAYG 2171	Year reserve = 0
Base	12.0	7.8	16.5	25.1	2104
Gradual increase of the coverage	11.9	7.3	16.2	25.1	2106

Note: the year the reserve is depleted is calculated with a contribution rate of 10 per cent.

4.6. Sensitivity tests on policy options

4.6.1. Eligibility conditions

In the base scenario, as requested, there are no eligibility conditions. It has been raised in the documents on the design that a scheme where there are no eligibility conditions may create some anti-selection issues. No eligibility conditions also create financial pressure on the scheme regarding the invalidity and survivor's pensions. In the present sensitivity analysis, eligibility conditions are considered: 5 years of contributions for all types of pensions and the payment of accumulated contributions with interest for members not qualifying. This scenario decreases the cost as illustrated in the following table.

Table 28: Sensitivity analysis: Eligibility conditions (percentages)

Scenarios	Full funding	PAYG 2046	PAYG 2071	PAYG 2171	Year reserve = 0
Base	12.0	7.8	16.5	25.1	2104
5 years eligibility condition	11.3	7.0	16.0	24.3	2120

Note: the year the reserve is depleted is calculated with a contribution rate of 10 per cent.

4.6.2. Automatic increases in the retirement age

In the base scenario, the retirement age remains unchanged at 65. This scenario assumes that the normal age of retirement will automatically increase with the increase in the life expectancy. Four years after the confirmation by StatsSA that there is an increase of 1 year in the life expectancy at the normal retirement age (age 65 at the implementation of the scheme) the retirement age starts to increase: it will increase by one month each year up to a maximum of 6 months.

Table 29: Sensitivity analysis: Automatic increases in the retirement age (percentages)

Scenarios	Full funding	PAYG 2046	PAYG 2071	PAYG 2171	Year reserve = 0
Base	12.0	7.8	16.5	25.1	2104
Automatic increases in the retirement age	11.8	7.8	16.5	24.5	2105

Note: the year the reserve is depleted is calculated with a contribution rate of 10 per cent.

In the actuarial valuation, it is assumed no mortality improvements after 100 years. It is important to state that the impact of increasing the retirement age may differ according to the way people react to the increase. However, increasing the retirement age should have an important positive impact on the financial sustainability of the scheme.

4.6.3. Normal retirement age at 60

In the base scenario, the normal retirement age is 65. It is however possible to start to receive the retirement pension at 60. In this case, the pension is reduced by 0.6 per cent for each month before age 65. For those who elect to delay the retirement after the age 65, the pension is increased by 0.7 per cent for each month after 65. In this scenario, it is assumed that the normal retirement age is 60 instead of 65 and it is possible to take the retirement at age 55 with a reduction.

Table 30: Sensitivity analysis: Normal retirement age at 60 (percentages)

Scenarios	Full funding	PAYG 2046	PAYG 2071	PAYG 2171	Year reserve = 0
Base	12.0	7.8	16.5	25.1	2104
NRA = 60	14.3	9.6	19.9	29.4	2081

4.6.4. Indexation of pensions in payment

In the base scenario, the pensions in payment are adjusted each year according to the CPI. In the present sensitivity analysis, pensions are adjusted each year according to the salary growth rate.

Table 31: Sensitivity analysis: Indexation of pensions in payment (percentages)

Scenarios	Full funding	PAYG 2046	PAYG 2071	PAYG 2171	Year reserve = 0
Base	12.0	7.8	16.5	25.1	2104
Adjustment to salary growth	13.1	8.4	18.0	28.0	2092

Note: the year the reserve is depleted is calculated with a contribution rate of 10 per cent.

4.6.5. Revalorisation of the salary

In the base scenario, the pension formula is based on a career indexed pension plan. All the salaries earned during the working life of the members are revalorised according to a factor and are used in the calculation of the pension. The revalorisation factor is based on the average salary increase. In the design of the funding policy, it will be possible to adjust downward the revalorisation factor when the financial situation of the scheme required it. This sensitivity analysis shows the impact of adjusting the salary to 90 per cent of the salary growth, instead of 100 per cent like it is the case in the base scenario.

Table 32: Sensitivity analysis: Revalorisation of the salary (percentages)

Scenarios	Full funding	PAYG 2046	PAYG 2071	PAYG 2171	Year reserve = 0
Base	12.0	7.8	16.5	25.1	2104
90% of the salary growth	11.0	7.5	15.1	22.6	2125

Note: the year the reserve is depleted is calculated with a contribution rate of 10 per cent.

4.6.6. Introduction of a floor

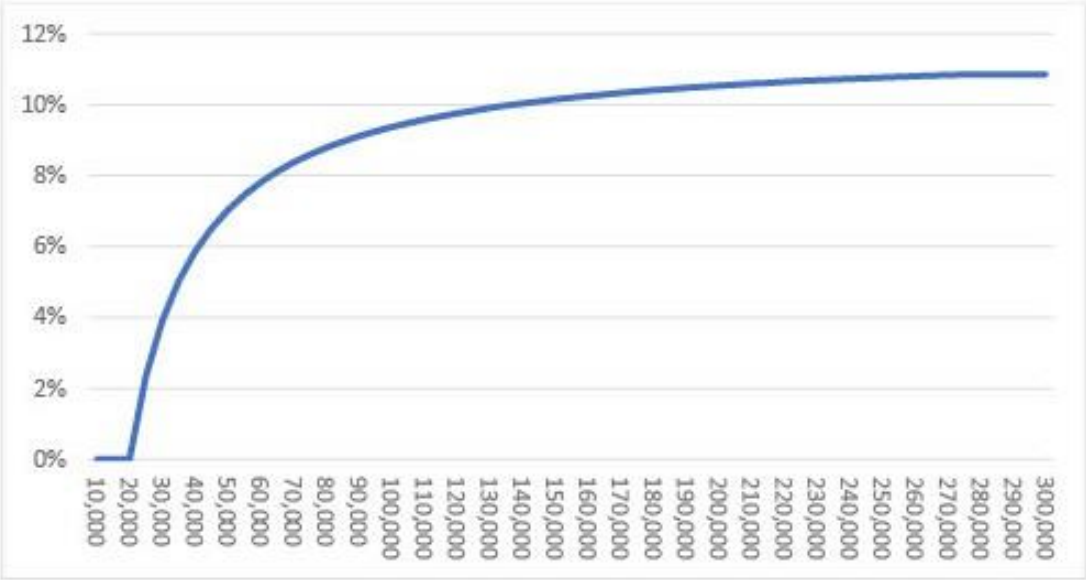
It is possible to introduce a new parameter in the design of the scheme to make the scheme less expensive in terms of contribution rate for individuals having lower income. This parameter is the contribution floor where the

contribution rate does not apply on a first level of salary, but benefits accrue on this first level of salary. Such feature is interesting to:

- Redistribute from the rich to the poor.
- Respond to the principal critic that social security pension schemes are skewed in favor of rich people.
- Incite to contribute for those with low earnings.

The introduction of such feature is not going to make the scheme more expensive. It has the objective to change the effective contribution rate, depending on the level of salary. People having the lowest salary are going to have the lowest contribution rate while those having the highest salary, the highest contribution rate. The following figure shows the effective contribution rate according to the level of annual earnings. A salary floor of Rand 20,000 is used which means that the first Rand 20,000 are not subject to contribution. In this example, an overall contribution rate of 10 per cent is used. The ratio of the total contributions on the total insurable earnings minus the floor increases to 11.7%

Figure 35: Effective contribution rate for a floor of R 20,000



5. CONCLUSION

This actuarial study deals with the implementation of a new NSSF in South Africa. To carry out the projections, it is expected that the scheme will be in force in 2022. The methodology used for the pension branch is based on a model developed by the ILO for reviewing the long-term actuarial and financial status of national pension schemes. The model has been adjusted to fit the situation of the NSSF. The ILO's model is based on methodologies that are appropriate and consistent with accepted actuarial practice. The data related to the NSSF (contributors) used in this actuarial valuation are in general complete and of enough quality to undertake an actuarial valuation and to obtain a picture of the financial soundness of the NSSF. Some elements in the data collection process bring some uncertainties to the actuarial valuation:

1. The mortality rates, the invalidity rates, and the retirement rates of the new insured populations because no experience exist.
2. The impossibility to match the financial statement of UIF with the data that has been transmitted.

An actuarial study requires many assumptions. The assumptions in this study are appropriate both individually and as a whole. They are also consistent taken together. Assumptions are established to reflect long-term trends rather than giving undue weight to recent experience. The objective of pension projections is not to forecast the exact development of the scheme's income and expenditures, but to verify its financial viability over the long-term.

This actuarial study shows that:

- The 10 per cent contribution rate is not sufficient to finance all the expenditures on a fully funded approach. According to the provisions described in **Annexure 1:** , the full funding contribution rate is 12 per cent.
- If a 25 per cent funding ratio is desired, as it is presently discussed, the contribution rate will have to double in the very long run.
- With a contribution rate of 10 per cent:
  - Total expenditures will be higher than contributions starting in 2052. In 2052, investment incomes will be used to pay the expenditures
  - In 2091, the contributions and the investment income are no longer enough to pay the expenditures, the reserve starts to decline.
  - In 2104, the reserve is depleted.
- The non-introduction of eligibility conditions may increase considerably the cost of the scheme particularly for the invalidity and survivors' branch.
- The risks the new NSSF will face depends considerably on the way the scheme will be financed.

Consultations with the tripartite partners were used to suggest a possible design for the new NSSF that would be compliant with the ILO standards and compatible with the policies promoted by the ILO. The ILO remains ready, on the basis of the discussions to be held between the social partners, to further support the Government in its social security reforms.

Annexure 1: General Description of the Scheme for the Base Scenario

1. Introduction

The following summary provides a general overview of the key coverage and benefits provisions for the scheme to be implemented. Only future services are considered in the National Social Security Fund. The provisions presented in this section may change according to the discussions that will take place between the different stakeholders.

2. Scope of the NSSF

The National Social Security Fund provides for the following benefits: Old Age Pension, Invalidity Pension, Survivors' Pension and Funeral Benefit.

2.1. Coverage

- The National Social Security Fund will be mandatory for workers in the public and the private formal sectors
- The minimum age at which a person may join the social security scheme is 16 years and the maximum age is 69 years. People working after age 69 will not be required to contribute. They will stop accruing benefits after 69.

3. Insurable earnings and contributions

The insurable salary includes the basic salary, all the allowances and bonuses, but excludes the commissions.

Contributions will be paid on the excess of the minimum annual insurable salary, up to the maximum insurable salary, at a rate of 10 per cent. In the base scenario, the is no minimum annual insurable salary. The maximum annual insurable salary will be R276,000 in 2018.

The level of the minimum and maximum insurable salaries will be revalorised annually based on the average salary increases in the economy.

4. Contribution rate

The contribution rate is 10%.

5. Qualifying conditions and benefit rates

5.1. Old Age Pension

5.1.1. **Eligibility conditions**: Every contribution creates a right to a pension.
5.1.2. **Age requirement**: Normal retirement age is 65 (with no reduction); Between ages 60 and 65, with a reduced pension (6 per cent per year prior to age 65); Between ages 65 and 70, with an increased pension (8.4 per cent per year after age 65).
5.1.3. **Pension amount**: Monthly payments equivalent to 1.09 per cent of career average indexed insurable salary for every 12 months of contributions.
5.1.4. **Pension indexation**: The pension amounts will be revalorised annually based on the increase in the cost of living, or the CPI.

5.2. Invalidity Pension

5.2.1. **Eligibility conditions (2 scenarios analysed)**: 24 months of contributions over the last 36 months or 50 percent of the contribution period (at least 3 years) or 5 years of contribution OR without eligibility conditions.

5.2.2. **Pension amount**: Monthly payments equivalent to 1.09 per cent of career average indexed insurable salary for every 12 months of contributions with a minimum pension of 32.7 per cent.

5.2.3. **Duration of pension**: As long as invalidity continues, up to normal retirement age. At normal retirement age, the disability pension is transformed to an old-age pension. The years the members have received the disability benefits are then treated as years of services.

5.2.4. **Pension indexation**: The pension amounts will be revalorised annually based on the increase in the cost of living, or the CPI.

5.3. Survivors' Pension

5.3.1. **Eligibility conditions (2 scenarios analysed)**: 12 months of contributions over the last 24 months or 50 percent of the contribution period (at least 2 years) or 5 years of contribution or in receipt of an old-age pension or an invalidity pension OR without eligibility conditions.

5.3.2. **Pension amount**: Where an insured member dies having satisfied the minimum contribution period, a monthly pension equivalent to 1.09 per cent of last insurable salary for every 12 months of contributions, provided that it is not less than 40 per cent of the last insurable salary. Where a pensioner dies, a monthly pension equivalent to the pension that was paid to him/her prior to his/her death. Under both cases, the Survivors' Pension is distributed between dependents in the following ways: 50 per cent for one dependent, 75 per cent for two dependents, and 100 for three dependents and more.

5.3.3. **Pension indexation**: The pension amounts will be revalorised annually based on the increase in the cost of living, or the CPI.

5.4. Funeral Benefit

5.4.1. **Eligibility conditions**: None.

Annexure 2: Methodology of the Actuarial Valuation

1. Introduction

This actuarial review makes use of the comprehensive methodology developed at ILO for reviewing the long-term actuarial and financial status of national social security systems. These modelling tools include a population model, an economic model, a labour force model and a long-term benefits model.

The actuarial valuation starts with a projection of the future demographic and economic environment of South Africa. Next, projection factors specifically related to the pensions are determined and used in combination with the demographic/economic framework.

2. Modelling the Demographic and Economic Environment

The use of the ILO actuarial projection model requires the development of demographic and economic assumptions related to the general population, the economic growth, the labour market and the increase and distribution of wages. Other economic assumptions relate to the future rate of return on investments, the indexation of benefits and the adjustment of parameters, if any.

2.1. General population

General population is projected starting with the most current data on the general population, and applying appropriate mortality, fertility and migration assumptions.

2.2. Inflation

Inflation rates are exogenous inputs to the economic model.

2.3. Labour force, employment, and insured population

The projection of the labour force, i.e. the number of persons available for work, is obtained by applying assumed labour force participation rates to the projected number of persons in the general population. Unemployment rates are assumed for the future and employment is calculated as the difference between labour force and unemployment.

2.4. Wages

Wages inflation are exogenous inputs to the economic model. Real wage development is checked against the labour productivity growth.

Wage distribution assumptions are also needed to simulate the possible impact of the social protection system on the distribution of income, for example through minimum and maximum pension provisions. Assumptions on the differentiation of wages by age and sex are established, as well as assumptions on the dispersion of wages between income groups.

3. Modelling the Financial Development of NSSF

The present actuarial review addresses all revenue and expenditure items of the NSSF. Income and expenditures are projected separately using a model specifically developed by the ILO for the pension branch. **Figure 36** presents a projection of the flow of financial balance. All benefits are projected separately for each sex and age.

Figure 37 summarizes the projection methodology of insured persons and beneficiaries.

Figure 36: Projection of the flow of financial balance

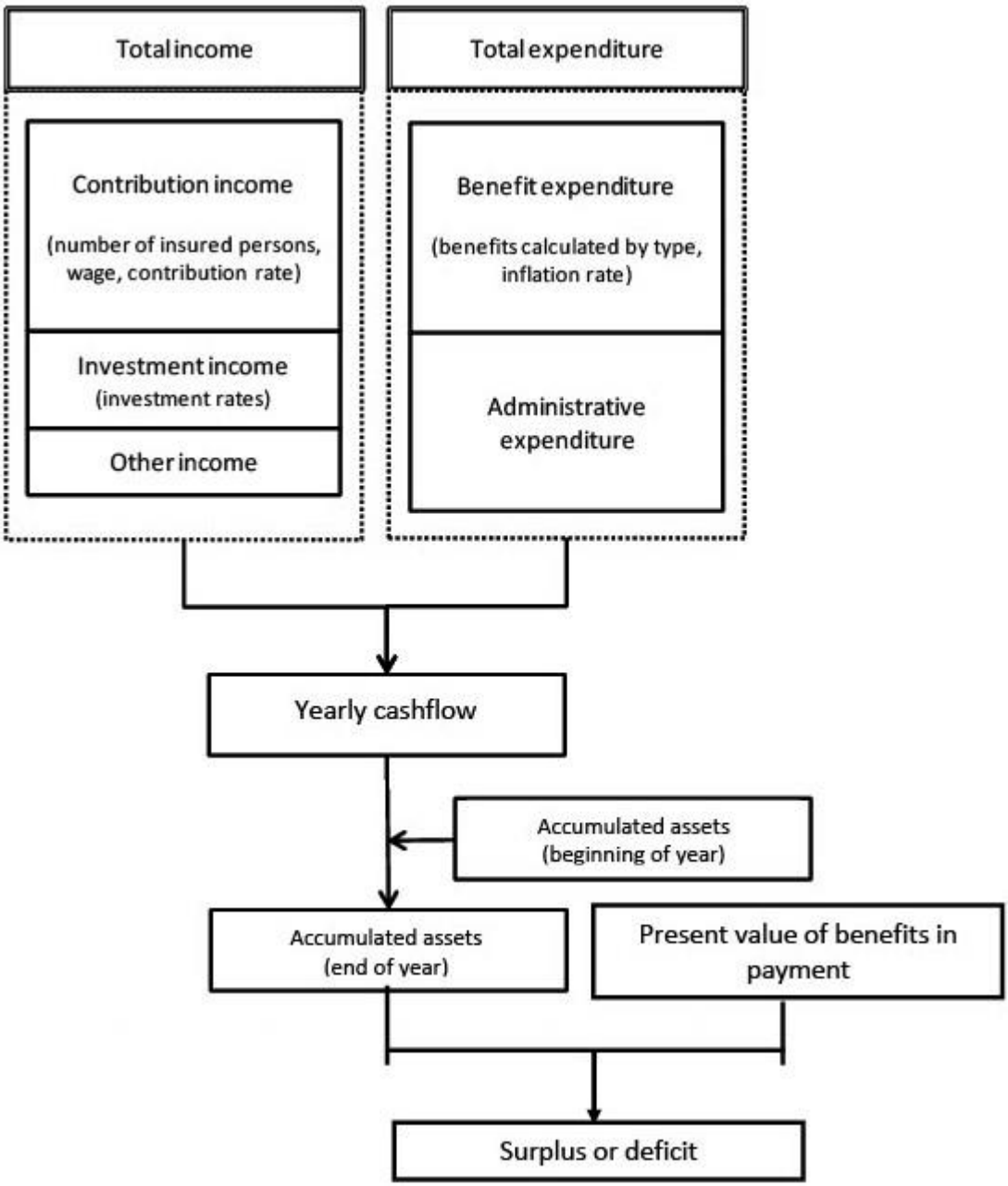
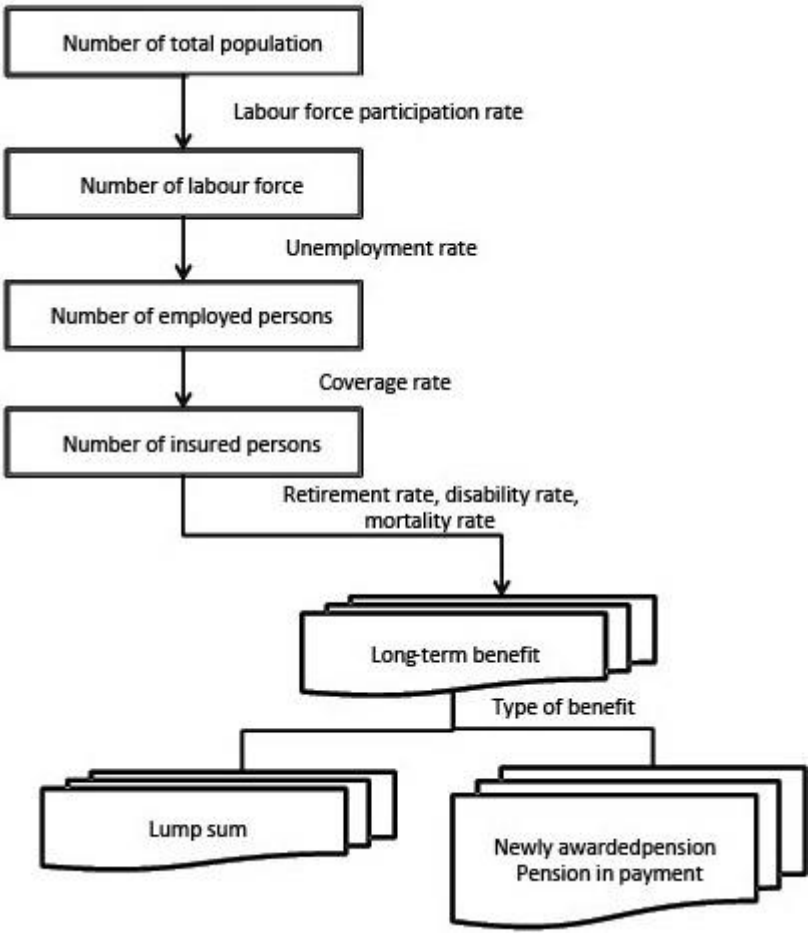


Figure 37: Projection methodology of insured persons and beneficiaries



4. Purpose of pension projections

The purpose of the pension model is twofold. First, it is used to assess the financial viability of the long-term benefits of the schemes. This refers to the measure of the long-term balance between income and expenditure of the system. In case of imbalance, a revision of the contribution rate or the benefit structure is recommended. Second, the model may be used to examine the financial impact of different reform options, thus assisting policy-makers in the design of benefit and financing provisions. More specifically, the pension model is used to develop long-term projections of expenditures and insurable earnings under the system, for the purpose of:

- assessing the options to build up a contingency or a technical reserve;
- proposing schedules of contribution rates consistent with the funding objective; and
- testing how the system reacts to changing economic and demographic conditions.

5. Pension data and assumptions

In addition to the demographic and macroeconomic frame already described, benefit projections require a set of assumptions specific to the NSSF.

The database as of the valuation date includes the insured population, the distribution of insurable wages among contributors and pensions in payment. Data are disaggregated by age and sex. This information comes from information transmitted by UIF and GEPF.

There is no past experience to estimate system-specific assumptions such as the retirement rates, mortality rates and invalidity rates. External sources of information, studies and best judgment have been used in the establishment of such assumptions.

The projection of the annual investment income has been done using a typical investment portfolio. A rate of return assumption is formulated on the basis of the nature of the system's assets and assumptions on future financial variables.

6. Benefit projection approach

Pension projections are made following a year-by-year cohort methodology. The existing population is aged and gradually replaced by successive cohorts of participants on an annual basis according to the demographic and coverage assumptions. The projection of insurable earnings and benefit expenditures is then made according to the economic assumptions and the scheme's provisions.

Pensions are long-term benefits. Hence, the financial obligations that a society accepts when adopting financing provisions and benefit provisions for them are also of a long-term nature: participation in a pension scheme extends over a whole adult life, either as contributor or beneficiary, i.e. up to 60 years for someone entering the scheme at the age of 20 years, retiring at the age of 60 years and dying some 20 or so years later. During their working years, contributors gradually build entitlement to pensions that will be paid even after their death, to their survivors.

It is not the objective of pension projections to forecast the exact progression of a scheme's income and expenditure, but to verify its financial viability. This entails evaluating the scheme with regard to the relative balance between future income and expenditure.

Annexure 3: Concepts on the Funding of Social Insurance

1. Introduction

The role of the actuarial methods in the funding policy of a pension scheme is to allocate the cost of the benefits and to calculate the required level of funding. It is important to have in mind that whatever the actuarial method chosen, the level of benefits to be paid will remain the same, all other things being equal. So, in terms of the ultimate amount of money to be paid (amount of benefits), the actuarial method does not change anything. It only changes the timing of the amount of money necessary to fund the benefits.

Actuarial methods to be used for an actuarial valuation will first depend on the financing system that is chosen. There are three financing systems: the pure pay-as-you-go (PAYG), the partially funded and the fully funded systems.

2. Pure assessment – PAYG system

Under this financial system, the contribution rate during a given period, for example one year (annual assessment) or a few years, is determined in such a way that income from contributions during a period will just cover the expenditure of the scheme during the same period, with a small margin to allow the constitution of a contingency reserve. This is the system usually applied to finance short-term benefits such as sickness and maternity cash benefits. Annual benefit expenditure is expected to remain at a relatively constant level once the scheme has attained a certain maturity unless the benefit provisions themselves have been changed. The contingency reserve enables coverage of unexpected expenditure due to temporary fluctuations of the risk factors involved. The reserve should, therefore, be maintained in a sufficiently liquid form so that it can be readily resorted to when necessary. If a pure assessment system were applied to a new pension scheme, it would involve frequent revisions of the contribution rate. The annual expenditure under a new pension scheme would begin at a comparatively low level and increase continuously over a long period of time. This is because there will be an increasing number of surviving pensioners. Another reason for escalating annual expenditure is that each new group of pensioners will be drawing higher rates of pension due to longer insurance periods compared with previous generations of pensioners.

3. Partially funded system

There are different approaches that can be used to partially fund a system, depending on the level of funding that is targeted. Two of these approaches are the General average premium (GAP) and the Scale Premium.

3.1. General average premium approach

A general average premium (GAP) approach provides for a theoretically constant rate of contribution ensuring financial equilibrium ad infinitum. At any time, the present values of all probable future contributions income plus accumulated reserves should be equal to the present value of all probable future outlays, both in respect of the initial population and of future entrants. The contribution rate determined under this system would be relatively high and would lead to the formation of high reserves. Though theoretically constant, in practice the contribution rate is likely to be revised at periodic actuarial reviews. If this approach were applied to a new pension scheme from the start, the rate of contributions would be relatively high and this could cause an undue burden on the economy and on the contributing parties. In this case, the economy should be able to invest and maintain a very large number of investments with appropriate investment management and risk analysis techniques. At the start of the pension scheme, when using this approach with a very long projection period, like 150-200 years, this approach produces a level of funding which is a proxy of a fully funded system. An interesting feature of this approach is that, by considering a very long period of time, the financing strategy includes many generations of contributors which is a desired characteristic for a social security pension scheme.

3.2. Scaled premium approach

It is possible to devise many intermediate systems of finance between the basically unfunded (PAYG) pure assessment system and the GAP approach. The following factors frequently lead to the adoption of an intermediate system of finance:

1. The contribution rate must not be excessive (with respect to the capacities of the members and the economy in general).
2. The initial, and any subsequent contribution rates established under the system of finance applied to the scheme, should remain relatively stable for reasonable periods of time. Increases in the contribution rate should be gradual, particularly when they are not accompanied by an improvement in benefits.

An example of an intermediate level of funding is the scaled premium approach. Under this approach, a contribution rate is established so that during a specified period, which is known as the period of equilibrium, the contribution income and the interest income on the reserves of the scheme will, in each year, be adequate to meet the expenditure on benefits and administration in that year. In order to avoid a decrease in the reserves after the end of a period of equilibrium, the contribution rate must be revised prior to this and a new higher contribution rate applied during a new period of equilibrium. Thus, the financial equilibrium would be assured for limited periods, such as 20, 15 or 10 years, within each of which the contribution rate is supposed to remain stable. Subsequently, it would be increased by stages – 20, 15 or 10 years, respectively. There would be a moderate accumulation of funds, the amount of which depends on the length of the period of equilibrium. A short period of equilibrium would result in a low contribution rate, which would have to be increased rather frequently, and would bring about a low degree of accumulation of funds, thus approaching the system of annual assessment. However, a long period of equilibrium would result in a relatively high initial contribution rate and a larger accumulation of funds, and consequently approaches the GAP approach. The scaled premium approach is flexible, as it permits adaptation to changes in the conditions determining the financing of the scheme. It should be emphasized, however, that the approach requires periodic increases of the contribution rate, which are not accompanied by benefit improvements. Although the contribution rate during the initial period of equilibrium will be lower than that under the GAP approach, eventually a stage will be reached when it will exceed the contribution rate required under the latter approach.

4. A fully-funded system

A fully funded system is a system where liabilities are fully funded. Instead of relying on younger generations of workers to pay the benefits, each generation is required to set aside enough money to pay their own benefits. At each moment during the life of the pension plan, accumulated contributions and investment income shall be enough to pay all the promises. If not, deficits should be amortized during a stated period. This kind of financing system is more prevalent in the private pension world because it protects workers if the pension plan ends, whereas a public pension scheme is supposed to be in place for ever. A fully funded scheme is also the approach that tries to minimize the intergenerational transfer of cost. Consequently, this approach is the one with the least intergenerational solidarity. For example, in Canada, in 2019, an additional income replacement rate has been introduced to increase ultimately the current level from 25% to 33.33 %. This additional 8.33%, which was the response of the provincial and federal governments for securing adequate retirement savings because of the decreasing of occupational pension plans, has the particularity to be fully funded because of the wish of the Canadian society to minimize intergenerational transfers.

5. Which system is better?

There is no single answer to that question. It depends on the particular context of each country, the objectives of the stakeholders and the limits and constraints in which the pension scheme operates. All methods have their risks, advantages and disadvantages.

However, to a very few exceptions, all social insurance pension schemes have historically been established on the principle of social solidarity, including intergenerational solidarity and are therefore partially funded. These social insurance schemes are in fact a social contract under which the current generation of contributors accept that their contributions be used to pay the benefits of current pensioners. This creates for the current generation of contributors a right to the contributions of the future generation of contributors to pay for their pensions.

In an economy where there is real salary growth (i.e. in excess of inflation), future generations of workers will have higher salary in real terms than the current generation of workers and may therefore be able to afford higher contributions. Partial funding also allows for gradual contribution rate increases which may take into account the economic development of a country.

Report 3

Financial Feasibility of the Basic Income Grant



Author: ***Costing conducted by the Actuarial & Analytical Solutions (A&AS) Team at Deloitte and Touché South Africa***

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ABBREVIATIONS AND ACRONYMS

BIG	Basic Income Grant
CIT	Corporate Income Tax
COVID-19	Coronavirus Disease 2019
CPI	Consumer Price Index
CSG	Child Support Grant
DAC	Davis Tax Commission
DSD	Department of Social Development
EITC	Earned Income Tax Credit
GDP	Gross Domestic Product
ILO	International Labour Organization
IMF	International Monetary Fund IMF
NDP	National Development Plan 2030
NHI	National Health Insurance
NIDA	National Income Dynamic Study
NIT	Negative Tax Income
NPC	National Planning Commission
OAG	Old Age Grant
PIT	Personal Income Tax
PPP	Purchasing Power Parity
SAM	Social Accounting Matrix
SARS	South African Revenue Service
SASSA	South African Social Security Agency
StatsSA	Statistics South Africa
UBPL	Upper Bound Poverty Line
VAT	Value-Added Tax
WHO	World Health Organization

EXECUTIVE SUMMARY

The purpose of this project is to assess the fiscal feasibility of providing income support to individuals who are between the ages of 18 to 59 in South Africa, considering the following:

- The nature of income support (universal or means tested, and conditional or unconditional);
- The value of income support (cover nutritional needs, reduce poverty or provide a certain standard of living);
- Links to the labour market;
- The macroeconomic and socio-economic impacts; and
- The delivery mechanisms.

From a fiscal perspective, the costs of implementing a Basic Income Grant (BIG) are significant, particularly in relation to providing universal coverage and considering higher levels of a BIG. Under the Base Growth Scenario, which is represents National Treasury forecasts over the projection period, the cost of universal BIG coverage at the level of the special COVID-19 Social Relief of Distress Grant ranges from 2.8% to 2.9% of nominal GDP over the projection period. This increases to 9.7% to 10.4% of nominal GDP over the projection period if a universal BIG is introduced at the Upper Bound Poverty Line (UBPL) level. The corresponding ratios to total tax revenue are 10.9% to 11.4% of total tax revenue for universal BIG coverage at the level of the special COVID-19 Social Relief of Distress Grant and 38.1% to 40.8% of total tax revenue for universal BIG coverage at the UBPL.

Allowing for a High Road Scenario with respect to GDP growth from 2021/22, the cost of universal BIG coverage at the level of the special COVID-19 Social Relief of Distress Grant ranges from 2.8% to 2.7% of nominal GDP over the projection period. This increases to 9.7% to 9.8% of nominal GDP over the projection period if a universal BIG is introduced at the UBPL level. The corresponding ratios to total tax revenue are 10.9% to 10.5% of total tax revenue for universal BIG coverage at the level of the special COVID-19 Social Relief of Distress Grant and 38.1% to 37.9% of total tax revenue for universal BIG coverage at the UBPL.

Comparison of the cost of universal BIG coverage under the Base Growth Scenario and the High Road Scenario demonstrates the fiscal significance of the BIG, although the resulting funding requirements can be reduced through higher economic growth.

Despite, the fiscal significance of implementing the BIG, the BIG should be viewed as a means to restructuring income in South Africa which suffers from the triple challenges of poverty, unemployment and inequality.

It is widely recognised that social assistance, particularly through the Old Age Grant (OAG) and Child Support Grant (CSG), has contributed significantly towards the reduction of poverty levels in South Africa. Implementing a BIG has the potential to make significant inroads into improved income equality in South Africa and possible economic gains through the multiplier effect. Based on author analysis, the implementation of a universal BIG at the level of the current special COVID-19 Social Relief of Distress Grant has the potential to reduce the concentration of income of the top 10% to 49.9% in 2019/2020 on an income per capita basis to just below 47.1% by 2024/2025. The share of household income per capita as a percentage of the total in the lowest income decile is projected to increase from 0.8% in 2019/2020 on an income per capita basis to 7.0% by 2024/2025. The corresponding income per capita Gini co-efficient decreases from 0.61 to 0.49, representing a 20% decrease.

A BIG could impact macro-level economic growth directly, through increasing household productivity and employment, stimulating aggregate demand, affecting labour force participation, and influencing savings and taxation. Based on analysis of the multiplier effects of the BIG at the level of the current special COVID-19 Social Relief of Distress Grant, the grant has the potential to positively contribute around 0.5% to GDP growth over the forecast period through improved household demand as well increase employment by 4.0% by the end of the projection period.

Further, basic income assistance supports investment into human capital development, for example: improved nutrition, health care, housing and transportation. The importance of human capital, in particular with respect to health education, in social and economic development is widely accepted. There is a strong correlation between Gross Domestic Product (GDP) per capita and education levels and life expectancy as a proxy for the level of health in a population.

If funded through Personal Income Tax (PIT), a universal BIG at the level of the special COVID-19 Social Relief of Distress Grant would result in an approximate average increase in effective tax rates of 8.2% across taxable income bands considered for 2023/24. A universal BIG at the LBPL would result in an approximate average increase in

effective tax rates of 19.8% across taxable income bands considered for 2023/24. A universal BIG at the UBPL would result in an approximate average increase in effective tax rates of 30.0% across taxable income bands considered for 2020/21. Similar results arise under the High Road Scenario.

The projected clawback of the cost of implementing the BIG through PIT under the universal scenario represents approximately 5% of the cost of a universal BIG (at all levels of BIG considered). This relatively small clawback is a result of the large number of recipients that fall in the lowest taxable income band (including those that who do not earn any taxable income) and hence are not subject to PIT, reinforcing South Africa's relatively small tax base. This small tax base is a symptom of South Africa's high and persistent inequality. Inequality in South Africa, as measured by the consumption Gini coefficient, was 0.61 in 1996, increasing to 0.63 in 2014[33]. This is despite the efforts to reduce inequality that the government has made since 1994.

The Inequality Trends Report by Statistics South Africa (StatsSA) found that labour market activity largely influenced the level of inequality within the economy, stating that about 67% of total inequality was driven by inequality in earnings. Income from the labour market had accounted for the largest proportion of income inequality at about 77.2% in 2006, decreasing to 74.2% in 2015. Wage distributions of South African income earners was found to have a "long upper tail" – highlighting that the bulk of the population was comprised of low-income earners, while the top decile of income earners held a substantial majority of the national income.

In the 2020 Budget Statement, Government announced tax relief on personal income to the value of R2 billion for the 2020/21 tax year in the hope that this will boost not only economic activity, but also increase tax revenue income. Furthermore, government signalled intent in the 2020 budget to cut corporate income tax in future budgets. Tax revenue has continuously deviated to the downside from its expected level, which strongly suggests that South African consumers are close to or at the maximum referred to in the Laffer curve theory of tax revenue, though no modelling with regards to the Laffer curve in respect of South Africa.[34]

While there have been warnings regarding raising taxes to reduce South Africa's budget deficit, it is important to note the difference between raising taxes to fund a BIG and raising taxes to fund a budget deficit. There are strong moral arguments given South Africa's history and high-income inequality for expanding PIT to fund a BIG, be it partially or fully. Economic arguments for expanding PIT on high-income earners, particularly in relation to the current economic crisis, include the provision of funding for the necessary state expenditure on low-income households.

It is noted that the economic effect of COVID-19 will include reduced revenue collection. PIT, Corporate Income Tax (CIT) and Value Added Tax (VAT) collections are expected to fall substantially over 2020/21. Given the economic impact of COVID-19, the capacity to raise PIT, CIT and VAT tax rates is limited. National Treasury has signalled the possibility of an inheritance tax and a "solidarity tax", which is regarded as a wealth tax, in a bid to raise additional finances for the fiscus.[35] The Davis Tax Commission (DAC) investigated the feasibility of a wealth tax. It was concluded that with the highly unequal levels of wealth in South Africa, a taxation system that ignores such inequalities in wealth, lacks legitimacy in the tax system.[36] It further concluded, however, that the introduction of a wealth tax cannot be implemented in the short-term. The DAC recommended that the decision regarding a wealth tax could not be made until the following actions were undertaken:

1. Determination of an appropriate tax base, that is, which forms of wealth to include within the scope of a wealth tax;
2. Provision of comprehensive data on the pattern of wealth ownership in South Africa; and
3. Undertaking a cost-benefit analysis as to whether the tax revenue generated would exceed the administrative and economic burden on taxpayers and the South African Revenue Service (SARS).

Given the significance of the cost of a universal BIG, alternative sources of taxation such as those mentioned above, should be assessed for viability in financing (partially or wholly) the implementation of a BIG. However, such alternative sources of taxation may only be practically implemented over the medium term, therefore PIT, CIT and VAT remain the alternatives over the short-term if implementation of a BIG takes place within the short-term.

[33] https://data.worldbank.org/indicator/SI.POV.GINI?locations=ZA&most_recent_year_desc=true
[34] https://static.pmg.org.za/170301wCsubmission.pdf
[35] https://businesstech.co.za/news/finance/411919/the-taxes-which-are-likely-to-increase-in-south-africa-and-those-that-wont/
[36] https://www.taxcom.org.za/docs/20180329%20Final%20DTC%20Wealth%20Tax%20Report%20-%20To%20Minister.pdf

In line with the recommendation of the DAC in relation to financing National Health Insurance (NHI), the implementation of a universal BIG lends itself to a financing base that is as broad as possible, in the interests of social solidarity. The cumulative effect of the combination of tax instruments should be progressive. The importance of social solidarity is in line with International Labour Organization (ILO) recommendation No. 202, which refers specifically to the principle of solidarity of financing.

Implementing a targeted BIG will reduce the resulting cost and hence consequent funding requirements that will likely need to be met through taxation. Various scenarios are considered in this respect. However, targeting is associated with the administration burden and cost created by applying this targeting in practice. It is noted that certain of the scenarios presented may not be practical to implement in relation to targeting and therefore should be considered for illustrative purposes only.

Alternatively, the cost of implementing the BIG can be funded through the reallocation of public expenditure. However, reallocating public expenditure comes with trade-offs. Spending of health, education and social development currently accounts for 56% of government expenditure, as per the 2020 Budget Statement. Furthermore, the implementation of NHI is a policy priority, which will result in additional demands on the fiscus. Ultimately, the introduction of a BIG will require trade-offs with other development programmes, including other social security reforms and tertiary education.

1. INTRODUCTION TO THE ASSESSMENT OF THE FINANCIAL FEASIBILITY OF THE BIG

1.1. Background and Introduction

"Achieving an inclusive and responsive social protection system"

The Constitution of the Republic of South Africa, Act 108 of 1996 (the Constitution) provides that everyone has the right to have access to social security, including appropriate social assistance for those who are unable to support themselves and their dependents. The State has a further obligation to take reasonable legislative and other measures within its available resources to achieve the progressive realisation of this right.

The Department of Social Development (DSD) provides social assistance to citizens in terms of the Social Assistance Act (No.13 of 2004). According to the 2018/2019 Annual Report published by the South African Social Security Agency (SASSA), as of March 2019, a total of 17.8 million social grants were paid. Child Support Grant (CSGs) and Old Age Grants (OAGs) make up the majority of grants issued, amounting to 89.9% of total grants issued. Other grants issued include the disability grant, care dependency grant, war veteran's grant, grant-in-aid and the foster grant.

It is widely recognised that social assistance, particularly through the OAG and CSG, has contributed significantly towards the reduction of poverty levels in South Africa. However, the importance of social protection for the unemployed has also been identified. The lack of social protection for the unemployed is a significant gap, in terms of social assistance. In 2002, the Taylor Committee first proposed the introduction of a Basic Income Grant (BIG) to all South Africans as a means of tackling unemployment, poverty and inequality. In 2012, the National Planning Commission (NPC) stated that this group had no choice but to depend on 'goodwill transfers' from those with access to income through employment or some form of social grant such as the OAG or the CSG. Furthermore, the Taylor Committee stated that dependency on social grant recipients dilutes the anti-poverty effects of social grants.

The National Planning Commission developed the National Development Plan 2030 (NDP), which provides for the long-term vision for the development of South Africa and an agenda until 2030. One of the central principles of the NDP is the elimination of poverty and the reduction of inequality. Furthermore, the NDP envisages that by 2030 South Africa will have a defined and sustainable social protection floor that provides a diversity of easily-accessible guarantees aimed at preventing or alleviating poverty, as well as protecting citizens against vulnerability. Discussions are currently underway regarding the introduction of a BIG. It is clear that a social protection floor necessitates such a grant given that such a floor guarantees a minimum income and service such as health to individuals.

1.1.1. Impact of COVID-19

During December 2019, patients were identified as being infected with a novel Corona virus in Wuhan, China. On 7 January 2020, 'Severe Acute Respiratory Syndrome Coronavirus 2' (SARS-CoV-2) was confirmed as the causative agent of 'Coronavirus Disease 2019', or COVID-19. Since then, the virus has spread to 213 countries, including South Africa. The World Health Organization (WHO) declared COVID-19 a pandemic on 11 March 2020.

President Cyril Ramaphosa declared a State of Disaster on 15 March 2020 in order to bring into effect certain non-pharmaceutical interventions deemed necessary to suppress the spread of the disease. A national lockdown came into effect as of midnight of 26 March 2020. From 1 May 2020, a gradual and phased easing of the lockdown restrictions began in line with a Risk-Adjusted Strategy which outlines activities that can be carried out at various alert levels, which are dependent on the spread of COVID-19. Currently, South Africa is on level 3 as per the Risk-Adjusted Strategy.[37]

Interventions such as prolonged lockdowns to help delay the spread of the disease have severe economic effects, including job losses, lower tax revenue and higher poverty. This is particularly relevant for South Africa. On 21 April 2020, a R500 billion stimulus package was announced by President Ramaphosa to counter the economic effects of the pandemic.

[37] https://sacoronavirus.co.za/COVID-19-risk-adjusted-strategy/

The pandemic has led many countries, such as Spain, Brazil, Namibia and Singapore, to implement some form of emergency income transfer measure. Spain has implemented a means-tested BIG permanently.[38] In South Africa, a special COVID-19 Social Relief of Distress Grant of R350 per month, payable from May 2020 to October 2020, has been introduced for unemployed people who need financial relief during the COVID-19 coronavirus pandemic. This is seen as a precursor to the adoption of a permanent BIG.

1.2. Purpose of the Project

The purpose of this project is to assess the fiscal feasibility of providing income support to individuals who are unemployed and between the ages of 18 to 59 in South Africa, considering the following:

- The nature of income support (universal or means tested, and conditional or unconditional).
- The value of support (cover nutritional needs, reduce poverty or provide a certain standard of living).
- Links to the labour market.
- The macro-economic and socio-economic impacts.
- The delivery mechanisms (tax credits, grants, wage subsidies etc.).

The provision of the BIG will involve decisions as to the nature, value (level) and form of the grant, that is, a universal subsidy design. The nature of the grant includes whether the BIG will be universal or means-tested, and conditional or unconditional. The various scenarios in relation to as to the nature, level and form of the grant have been considered in assessing fiscal feasibility.

The potential impact of the BIG include links to the labour market and economic and socio-economic outcomes. Section **2.1** covers a review of research of the potential impact of a BIG including delivery mechanisms.

Fiscal feasibility has been assessed by considering the direct costs of BIG provision including claw-backs through taxation under universal coverage, the resulting impact on individual taxpayers and the direct economic and socio-economic benefits deemed possible to include in the feasibility model.

Research into the theoretical aspects of basic income is provided in the appendices for reference.

1.3. Sources of Data and Information

The project made use of data obtained from tabled budget information (2020 Budget Statement, 2020 Supplementary Budget Statement[39] and the 2019 Medium-Term Expenditure Policy Statement) from National Treasury, SARS Individual Panel Data, SASSA grant information, National Income Dynamic Study (NIDS) Panel Data and various StatsSA reports (including underlying data).

Aside from the above-mentioned data sources, a variety of documents and reports were utilised in the qualitative analysis as set out in the appendices for reference.

[38] https://blogs.unicef.org/evidence-for-action/from-crisis-comes-opportunity-spains-basic-income-response-to-COVID-19/

[39] Economic forecasts relating to the 2020 Supplementary Budget Review was also sourced from the following International Monetary Fund document: https://www.imf.org/en/Publications/CR/Issues/2020/07/28/South-Africa-Request-for-Purchase-Under-the-Rapid-Financing-Instrument-Press-Release-Staff-49612

Table 1: Data Sources

Data/Information	Source
2020 Budget Review 2020 Supplementary Budget Review	National Treasury
SARS Individual Panel Data	National Treasury (SA-TIED)
SASSA Grant Information	SASSA
General Household Survey (2018) Living Conditions of Households in South Africa(2014/15) Mid-year population estimates (2019)	StatsSA (www.statssa.gov.za)
National Income Dynamic Study Panel Data	NIDS (http://www.nids.uct.ac.za/)

1.4. Limitations of the Study

Projections set out in this report are estimates only and should be interpreted as such. The projections are highly dependent on economic forecasts which have been derived in the context of much uncertainty of the epidemiological outcomes relating to and the economic outcomes resulting from COVID-19, which in of itself is nearly unique in the vastness of the economic impact it is having on South Africa and the rest of the world. Projections should therefore be treated with caution.

1.4.1. Limitations to the Social Matrix Multiplier Model

The Social Accounting Matrix (SAM) multiplier model, used to demonstrate the distributional and economic impacts of a BIG in Section **2.8**, estimates the circular flow of activities around the economy. Pyatt & Round (1985) describe the model as: a “circular flow of income around the familiar macro-economic loop of demands on activities, leading to demands for factors, hence to the incomes of institutions, and from there back to demands on activities”. The model tracks how sectors interact among themselves, other sectors and the rest of the world, using intermediate inputs, labour and capital to produce final goods and services.

According to Alarcon (2000), the following assumptions are required for inference to be conducted using the SAM multiplier model:

- Average propensities to spend are fixed, linear, and considered constant or at least stable over the short-to-medium term;
- Relative prices are constant over the time horizon of the model, usually the short-term. This implies that the components which make up any account have substitution elasticities which are zero across accounts and infinite within accounts, i.e., they are homogenous within and heterogeneous across accounts;
- Expenditure-income elasticities are constant and equal to unity;
- There is perfect complementarity between capital and other factor inputs;
- The economy has idle capacity utilization; and
- A number of accounts are exogenous.

The model has the following advantages:

- Inter- and intra-sectoral linkages are specified by identifying income and expenditure interrelationships.
- This allows for the incorporation of factors of production, such as capital and labour, and additional economic actors, such as households, firms, capital and enterprises.

However, the SAM model also contains the following limitations:

- The level of disaggregation of households limits the behaviour to homogenous by income grouping. This means that for a given level of income, households behave in an identical manner to other households with a similar income level.
- The data and skill-intensive nature of building the SAM matrices for use in the multiplier model mean that often the latest available data may be a few years delayed.

- Utilisation is represented statically, as is production. Firms cannot adjust production coefficients as a response to changes in prices. That is, production is fixed in inputs.
- The model cannot capture the behavioural elements of firms and other economic actors in response to changes, income levels.

The SAM multiplier model remains an effective tool to measure the introduction of a shock such as a transfer of income that would exist with the introduction of a BIG. The static nature of the model means that the model is best used as a measure of gauging initial economic impacts. However, in the case of a BIG, it is recommended that effective longer-term study should be conducted alongside a pilot study that would quantify initial behavioural and labour market situations.

As Jami (2006) describes: "While some of the assumptions may be justified and some remains to be the limiting features of the model, the SAM and the SAM-based multiplier model has been widely appreciated in examining the effects of real shocks on the economy on the distribution of income across socio-economic groups of households, particularly from a short term perspective"

2. FISCAL FEASIBILITY ASSESSMENT OF THE BASIC INCOME GRANT

2.1. Potential Impact of a Basic Income Grant in the South African Context

The potential impact of the BIG include links to the labour market and economic and socio-economic outcomes. This section covers a review of research of the potential impact of a BIG.

2.1.1. Links to the Labour Market

2.1.1.1. Supply of Labour

Concerns exist that social protection creates disincentives to work and could perhaps negatively affect investment in education and training. The underlying theory behind this is that unearned income acts as a disincentive to enter, or remain in, formal employment, especially where earned income is close to the level of the grant. However, social cash transfers in South Africa have increased job-seeking efforts and migration and resulted in more recipients than non-recipients finding employment (Samson *et al*. 2004). This was primarily driven by the increased ability to explore employment possibilities resulting from the increase in income at household level. Seekings (2007) also finds that the effect of the disincentive to work is non-existent given the high and sustained rate of unemployment in South Africa. Any withdrawal from the labour supply of the working-age population will still be met with net positive results in terms of overall employment outcomes. Furthermore, it is suggested that this disincentive may only be a factor in developed nations, where accepting social assistance encourages behaviour of accepting unemployment and "*living off the state*".

In the case of the BIG in Iran, without any behavioural conditions attached, it could be expected that the nationwide unconditional cash transfer programme would create labour market disincentives. Saleh-Isfahani and Mostafavi-Dehzooei (2017) examined evidence of the impact of a government transfer on hours worked and labour force participation rates in Iran. They acknowledge that a rational assumption is that the increase in unearned income should increase leisure, thereby reducing the labour supply. However, their analysis finds that there is no negative impact on the labour supply as a result of the unearned income.

Banerjee *et al.* (2017) provide further evidence that unearned income does not negatively impact the supply of labour. Using a randomised controlled trial of government cash transfer programmes for six developing countries, they find no systematic evidence that cash transfer programmes discourage work. The authors do however make an interesting observation: one of the relationships tested was between the total size of the cash transfer and the attitude that poverty is as a result of laziness (over an unfair society), an attitude that has also been backed up by Seekings (2007). The result saw an increase in resentment between the net contributors to the cash pool and net recipients. In a country such as South Africa, which is characterised by high levels of income inequality, introducing a higher taxation for upper income households is likely to be met with backlash over those who believe that poverty is a result of laziness.

In addition, social protection through, for example, the use of unconditional cash and food transfers, have been shown to lead to better employment opportunities for resource-poor households by freeing up time, allowing a portion of the transfer to be invested in job-seeking or migration to areas where job opportunities are greater. For example, Brazil's Bolsa Família increased labour-market participation of beneficiaries by 2.6% compared with non-beneficiaries (Oliveira *et al*. 2007 cited in Holmes and Jones 2013). It is noted that Bolsa Familia is a conditional cash transfer programme where conditions include children being kept in school to complete education which is a deliberate human capital investment. Another key condition was linking beneficiaries to employment training

The design of social protection schemes can help mitigate the risks involved with the impact of social protection on the supply of labour. For example, Turkey's Conditional Cash Transfer requires participants to visit government offices and banks to increase contact with job markets (Grosh *et al*. 2008).

2.1.1.2. Demand for Labour

As cited in the Taylor Report, there is evidence of a positive efficiency wage effect in many industries in South Africa as per a Dresdner Bank study of South African manufacturing sectors. This is consistent with international experiences in many low-wage developing countries as per various World Bank studies. Maloney and Ribeiro (1999) find significant efficiency wage effects using firm-level data from Mexico. Valenchik (1997), using Zimbabwean firm-level data, demonstrates positive efficiency wage effects as well.

The role of remittances from the working poor to the very poor as a social safety net is well documented, particularly in the case of South Africa. This is viewed as a tax on the working poor and therefore reducing the "*efficiency wage*" effect. Therefore, basic income assistance reduces the reliance on workers providing remittances. This allows workers to channel more of their wages to productivity-enhancing consumption and human capital investment, increasing firm competitiveness and thus raising production and the demand for labour.

2.1.2. Economic and Socio-Economic Impacts of Basic Income Support

2.1.2.1. Socio-Economic impacts

Basic income assistance supports investment into human capital development, for example: improved nutrition, health care, housing and transportation. Evidence exists internationally of the impact of income transfers on these social determinants of poverty.

The Alaskan experience with respect to a BIG suggested a 38.8 gram increase in birth weight in babies of participants, along with a 14% decreased likelihood of low birth weight. These results were more significant among low-income mothers.

The universal basic income support pilots in India and Namibia, have also demonstrated positive impacts on beneficiaries and their families, namely with regard to improved food and nutrition, health outcomes, school enrolment, as well as a marked reduction in child labour (Davala *et al*., 2015; NANGOF, 2009; Schjoedt, 2016). In the Indian Madhya Pradesh pilot programme, a relatively trivial amount to test whether a small amount could still make a difference, for an unconditional benefit level of US$4.40 for adults and US$2.20 for children resulted in positive changes across all indicators. Families experienced increased productivity, improved education outcomes as children could spend longer in school, improvements to food security, while actually seeing a decrease in alcohol consumption despite the increase in unearned income. Subsequent research from the Indian pilot also found that expanding the universal basic income to approximately US$6.30 with a coverage of 75% of the population could have a greater impact than the Public Distribution Scheme, as well as the Mahatma Gandhi National Rural Employment Guarantee Scheme (Ortiz *et al*., 2018). In South Africa, the OAG and CSG have led to improved nutrition, health and height of children (Samson *et al*. 2004).

The receipt of transfers also has the potential to enable excluded groups to participate in growth processes. Targeting women with transfers has been shown to increase their decision-making power within the household with respect to expenditure decisions. This often leads to greater spending on children, which improves their chances of survival, as well as their health and educational outcomes (Samson & Miller 2012; Scott 2009). The highest increase in enrolment rates among children living in recipient households of South Africa's social pension, for example, was amongst girls (7%) (Scott, 2009).

Social assistance can reduce or prevent the need for distress selling of productive assets, such as livestock after an income shock. Berhane *et al*. 2011 performed an evaluation of Ethiopia's Productive Safety Net Programme which showed that 60% of beneficiaries avoided having to sell productive assets to buy food after an income shock.

Social assistance can help prevent the need for other negative and harmful coping strategies such as withdrawing children from school or reducing food intake, which may deteriorate human capital. Children of families enrolled in Mexico's Progresa conditional cash transfer programme were found to be less likely to drop out of school if an adult in the family became unemployed (de Janvry *et al*. 2006, in Alderman & Yemtsov 2013).

At a microeconomic level (individual or household level), social protection measures introduced in response to the East Asian financial crisis were crucial in protecting productive and human capital, thereby preventing decreases in productivity. School enrolment rates dropped during the crisis, especially among the rural poor (Frankenberg *et al*. 1999 cited in Grosh *et al*. 2008) after which various measures were introduced. Studies have shown that demand for social services use fell less among recipients than among non-recipients (Cameron 2002; Saadah *et al*. 2001, in Grosh *et al*. 2008) and that the response was instrumental in stabilising consumption and reducing child labour (IEG 2011).

Social protection leads to better employment opportunities by enabling job seeking and supporting active labour market policies. These impacts have often been shown to be greater for women. Brazil's Bolsa Família, for example, increased labour-market participation of beneficiaries by 2.6% compared with non-beneficiaries, with women's participation being 4.3% higher than that of men (Oliveira *et al*. 2007 cited in Holmes & Jones 2013).

Social cash transfers (CSG and OAG) in South Africa and elsewhere have increased job-seeking efforts and migration and resulted in more recipients than non-recipients finding employment (Samson & Miller 2009).

Social protection can also help reduce income inequality. In the Namibian pilot programme example, the areas that received the grant experienced a significant drop in household poverty. The number of households living below the poverty line fell from 76% to below 16% during the project. In 2002, the Taylor Committee in South Africa found that a universal grant of R100 per person per month has the potential to reduce poverty by approximately 76%, while a combination of this grant with the CSG will further reduce poverty rates.

Rigolini *et al.* (2020) found a significant reduction in the Gini Coefficient as a result of an estimated basic income-reform programme – 7% in the case of South Africa. They suggested the level of purchasing power parity (PPP) income class poverty line should be US$5.50 in 2011 terms. This is viewed as appropriate for an upper-middle income country according to their classification. They also predicted a reduction in poverty headcounts of 56% as a result of the change in income. Based on a BIG of R1 584 (in 2012 terms) per person per year (a 2.3% of GDP spending increase), the International Monetary Fund (IMF) (2017) predicts a 0.05 drop in the Gini Coefficient.

2.1.2.2. Macroeconomic Impacts

The potential macroeconomic impacts of a BIG include increasing household productivity and employment, thereby stimulating aggregate demand, affecting labour force participation, and influencing savings and taxation.

Consensus is building with regard to the role of social protection in reducing inequality and its positive impact on economic growth, particularly in developing countries (Barro (2008) cited in Mathers, 2014). With respect to the Namibian pilot programme, economic participation (labour participation) in the local economy increased to 55%, from 44% prior to the introduction of the grant. This would increase consumption amongst the community, providing an increase in demand, which would have lowered unemployment and brought about increased economic growth for the area. AKA (2016) examined the economic impact of using a VAT increase to fund a BIG in the Ivory Coast. They found that a universal unconditional monthly grant of R40 (in 2003 terms), representing 4.3% of GDP, reduced poverty levels by 8.7%, (measured as the proportion of individuals who live below the poverty line) and reduced the Gini coefficient from 0.769 to 0.754. This is based on financing achieved by a significant increase in VAT of 5% to 9.5%. The monthly grant of R40 represented 7% of the poverty line.

The BIG may increase household productivity and employment. This can stimulate aggregate demand and impact economic growth through the multiplier effect. As cited in Jacobs *et al.* (2020), Du Toit and Neves (2009) report evidence with regard to the multiplier effect of social grants for recipient households and local communities. Aliber *et al.* (2007) found in a study on the contribution of social grants to local economic development in the rural Zululand District in KwaZulu-Natal that cash grants enhanced the spending power of poor households and that much of the

income from these grants was circulated within the same communities, supporting local small businesses and micro-entrepreneurs. Recipients contributed to more than 90% of local expenditure.

While international evidence suggests employment may increase this may not necessarily be the case for South Africa, given its subdued economic outlook and structural unemployment problem. In order to capitalise on the possible economic benefits of a BIG, strategies such as diversifying local production for local consumption/demand are needed. As cited in Mathers, 2014, Arnold *et al*, 2011 and Barrientos and Scott, 2008, the multiplier effect is greater for social protection targeted to poor households in small, self-contained communities or local economies that tend to spend locally and on locally-produced products.

The ILO (2011) highlights the potential of social protection to stimulate aggregate demand in an economy during economic downturns through counter-cyclical spending. ILO (2011) suggests that countries with effective social protection systems better responded to the 2008/09 global financial crisis and that social protection measures were as effective at saving jobs as other ad-hoc stimulus packages were.

Research indicates that the impact of social protection on aggregate economic growth in low-income context is likely insignificant. This may be the case for two main reasons: the scale of spending on social protection and the marginal share of national income in the hands of the poor. As per ILO (2011), for a country with lower inequality, such as the Ukraine where income from poor household account for 9.93% of GDP, a 5% increase in the income of the poorest households would translate to a 0.5 percentage point increase in aggregate growth. With respect to a highly unequal country, such as Honduras where poor household income accounts for 2.02% of GDP, a 5% increase in income across all poor households would only result in a 0.1 percentage point increase in aggregate growth. Thus, while social protection may impact on productive capacity at household level, it is unlikely to have significant direct effects on aggregate growth and even less so in countries with high inequality and low social spending (Barrientos (2013), and Levy (2006) cited in Mathers (2014)).

Furthermore, research shows that the impact of social protection on aggregate economic growth by type of social protection may differ. Arjona *et al.* (2012) cited in Mathers (2014) shows that an increase of 0.1 percent of GDP in spending on programmes primarily aimed at improving productivity and employment leads to a one percentage point increase in long run real GDP growth, while similar increases on consumption-smoothing programs lead to a 0.2 percentage point decrease in long run real GDP growth.

There are potential negative impacts of increased taxation to fund social protection. However, the results depend on the nature of the assumptions used, the structure of the taxation system and tax buoyancy of the selected country. As Matthews (2017) summarises, "*many, if not most, economic modelers would come to very different conclusions: that a basic income [assistance] discourages work, that raising taxes to pay for it could have profound negative economic impacts, and that not paying for it and exploding the deficit is a recipe for fiscal and economic ruin*".

That said, there are positive stimulus effects in the short-term, as lower-income households typically spend their money within a shorter time horizon than higher-income households, who may allocate a higher proportion of their income to savings. However, traditional economic theory suggests that, in the long run, any form of redistribution reduces growth because higher-income households have higher rates of savings than the poor, and higher taxation reduces incentives to invest and innovate where it is assumed that savings equals investment. Again, the results from studies that were shown above, as well as in the table below depends on the type of models used and the assumptions made on, for example, whether savings flow out of or remain in the country. Any foreign savings element will change the results of the study.

Critics also suggest that basic income support may not be as effective in relieving poverty or achieving development goals as other transfers have. The reason for this is that allowing for a universal basic income grant requires a transfer to the rich through progressive taxation, who were not benefitting before, which would come at the expense of the poor – this effect could be exacerbated if the potential introduction of universal BIG programmes replaced those targeting children or other vulnerable groups. (Rigolini *et al*.,2020).

2.1.3. Delivery Mechanisms

Delivery mechanisms for a BIG in South Africa include the following:

- Benefit-Based Programs Not Based on Work
- Negative Tax Income ("NIT")

- Earned Income Tax Credit ("EITC").

The provision of social grants through SASSA is a "Benefit-Based Programmes Not Based on Work" delivery mechanism. There were 17.8 million social grants paid in 2018/19. This delivery mechanism has advantages of simplicity and transparency, including it being easily communicated to and understood by the public.

The BIG could be delivered through EITC, which targets basic income assistance through tax exemption below a certain income level, or the NIT whereby the level of basic income support provided is inversely proportional to a person's income. The EITC can be seen as delivering a flat-rate BIG with the NIT, an income dependent BIG, with automatic claw-back of taxes for those earning above the taxable income threshold.

The main limitation of these delivery mechanisms is that the current tax administration, SARS, only reaches formal wage earners. This would leave out informal workers and by definition, the unemployed.

There are currently approximately 14 million registered taxpayers with about half of these taxpayers earning below the tax threshold and hence not paying taxes. The estimated number of individuals employed in the informal economy equates to 2.9 million in the 4th quarter of 2019 as per the Quarterly Labour Force Survey (QLFS) (Quarter 4, 2019). There were 12.7 million individuals defined as not economically active. Further limitations would include the information requirements in respect of the income of those employed in the informal economy to assess the level of basic income and tax (if applicable).

2.2. Fiscal Feasibility Assessment Process Methodology and Assumptions

The fiscal feasibility of the BIG has been assessed by considering the direct costs of BIG provision including clawbacks (money paid out by government which is return through other forms) through taxation under universal and targeted coverage and the resulting impact on individual taxpayers.

The projection period includes fiscal years 2020/21 to 2024/25 with 2019/20 included as a base fiscal year for comparison purposes.

2.2.1. Methodology

2.2.1.1. Direct Cost of the Basic Income Grant

The take-up of the BIG is demand driven, that is, it depends on the size of the targeted population. The cost of the BIG under the various scenarios is therefore equal to demand multiplied by the proposed level of the BIG.

2.2.1.1.1.Nature of the Basic Income Grant

The current proposals for a universal BIG are in line with the recommendations made in 2002 by the Taylor Committee. By making the grant available to all South Africans, the barrier to higher take-up of social grants among poor households would be eliminated. It has been found that there had been contradictory interpretations of the means test and that the administrative requirements associated with the test was the main barrier to higher take-up of social grants among poor households. It has also been argued that the income test discriminated against households with a large number of dependents.

The evidence arising from international experience presented earlier concludes that the administration system that accompanies means testing may result in significant costs and inefficiencies and that means-tested schemes are less effective at reducing poverty and inequality than universal basic income systems, while universal basic income schemes are better at preserving dignity for recipients.

Various scenarios are considered with respect to targeting. However, targeting is associated with the administration burden and cost created by applying this targeting in practice. It is noted that some of the scenarios presented may not be practical to implement in relation to targeting and therefore should be considered for illustrative purposes only.

Furthermore, it is noted that the proposals for a universal BIG in South Africa correspond with an unconditional grant. For purposes of the feasibility assessment, an unconditional grant has been considered.

2.2.1.1.2.Level of the Basic Income Grant

The ILO recommends a level of basic income support equivalent to the national poverty line, however, they acknowledge that there are debates in many countries as to whether national poverty lines correctly represent a minimum acceptable standard of living and allow life in dignity. In 2012, StatsSA released South Africa's official national poverty lines. South Africa's national poverty lines are an absolute measurement of poverty, which include three measures of poverty, namely:

- The food poverty line (FPL);
- The lower-bound poverty line (LBPL); and
- The upper-bound poverty line (UBPL).

The FPL is based on the daily calories a person needs to survive in line with the United Nations' minimum daily consumption requirement in emergency situations. This is equal to 2 100 calories per person per day. Both the LBPL and the UBPL include non-food items in addition to the food poverty line, based on a cost-of-basic-needs approach for non-food items. These resources are defined in terms of reported consumption expenditure. Therefore, where food expenditure is equivalent to the food line, the poverty lines represent the amounts that households require to meet basic foods and basic non-food needs.

The LBPL and the UBPL are based on two different reference groups of households, which are chosen to be representative of national consumption levels and patterns. The reason for having two reference groups is that food preferences differ significantly by income and expenditure levels. Households with high income/expenditure characteristics tend to pay more per calorie for food compared to households with low income/expenditure characteristics. The construction of the two reference groups allows for households whose total expenditure is close to the food poverty line and who therefore sacrifice some basic food needs in order to meet non-food requirements. This implies that the non-food expenditure of such households represents an austere minimum expenditure on non-food basic needs.

With effect from August 2020, the LBPL was equal to R840 per month and the UBPL was R1 268 per month.

Scenarios considered with respect to the level of the BIG include a BIG equivalent to the special COVID-19 Social Relief of Distress Grant, the LBPL, the UBPL and R500 per month (2020/2021 monetary terms) in respect of the Phased-in Coverage scenario discussed below. The level of the BIG under the Phased-in Coverage Scenario is broadly in line with the FPL.

With respect to consideration of a variable BIG, the current grant system in South Africa pays grants on a per individual basis. While this can allow for differences in household size, the Taylor Committee argued that this discriminated against larger households given the dependency on the OAG and CSG by unemployed individuals in South Africa. The introduction of a universal BIG would eliminate this situation, whereby the BIG paid on a per individual basis would allow for variable household sizes.

Inflation forecasts, as per the 2020 Supplementary Budget Review, have been applied to the BIG grant amount for projection purposes.[40]

2.2.1.1.3.Quantifying Target Population

In the South African context, the need for a BIG is largely driven by the challenge of unemployment, poverty and inequality.

South Africa's persistently high unemployment rate has been a long-standing cause for concern. As per the StatsSA Quarterly Labour Force Survey for Quarter 1, 2020, the unemployment rate increased to 20.1% in Quarter 1 of 2020, which was the highest rate experienced in 11 years. Since Quarter 4, 2009, the unemployment rate has increased by 6.0%. These figures are calculated under the narrow definition of unemployment, which means that one must be actively looking for work. The expanded definition of unemployment, which includes not only those

[40] http://www.treasury.gov.za/documents/national%20budget/2020S/review/FullSBR.pdf

who do not want to work but also discouraged job seekers, saw the unemployment rate rise from 38.7% to 39.7%. The difference between the two measures of unemployment underlines the extent of the problem in South Africa, namely, the number of workers who are discouraged and have given up on gaining employment illustrates how dire the situation has truly become.

Of the working age population (ages 15 to 64) of 38.9 million in Quarter 1, 2020, 15.4 million were classified as not economically active, with 23.5 million participating in the labour force. Of the 23.5 million individuals participating in the labour force, 7.1 million were unemployed. Of the not economically active, 2.9 million individuals were discouraged work seekers and 12.5 million individuals were "other not economically active".

As per the Poverty Trends in South Africa Report published by StatsSA in 2017, which examines absolute poverty in South Africa from 2006 to 2015:

- 30.4 million people were living below the UBPL in 2015, representing 55.5% of the population compared to 31.6 million people living below the UBPL in 2006 (31.6% of the population).
- 21.9 million people were living below the LBPL in 2015, representing 40.0% of the population compared to 24.2 million people living below the LBPL in 2006 (51.0% of the population).
- 13.8 million people were living below the FPL in 2015, representing 25.2% of the population compared to 13.4 million people living below the LBPL in 2006 (13.4% of the population).

South Africa is consistently ranked as one of the most unequal countries in the world. Inequality in South Africa measured by the consumption Gini coefficient was 0.61 in 1996, increasing to 0.63 in 2014[41]. This is despite the efforts to reduce inequality that the government has made since 1994.

The Inequality Trends Report by StatsSA found that labour market activity largely influenced the level of inequality within the economy, stating that about 67% of total inequality was driven by inequality in earnings. Income from the labour market had accounted for the largest proportion of income inequality at about 77.2% in 2006, decreasing to 74.2% in 2015. Wage distributions of South African income earners was found to have a "long upper tail" – highlighting that the bulk of the population was comprised of low-income earners, while the top decile of income earners held a substantial majority of the national income. The Gini coefficient based on household income received from the labour market was 0.73.

A number of scenarios have been considered to take into account the challenges of unemployment, poverty and inequality. StatsSA mid-year population projections (2019) have been applied over the projection period to determine the number of recipients under each of the scenarios considered, outlined as follows:

- **Universal Coverage**: recipients of the BIG equates to the population aged 18 to 59.
- **Targeted Coverage**: recipients of the BIG equates to the proportion of the population aged 18 to 59 to be targeted as follows:

    1. **Unemployed**: the number of unemployed individuals aged 18 to 59 has been based on employment estimates as per the StatsSA QLFS for Quarters 2 to 4, 2019 and Quarter 1, 2020 for the base fiscal year. The proportion of the population who are unemployed has been projected based on GDP growth and its impact on the unemployment rate. Unemployment has been defined as those individuals who are not employed, including those in informal employment.
    2. **Lower Bound Poverty Line**: the number of individuals aged 18 to 59 who fall below the LBPL based on the StatsSA General Household Survey (2018). The proportion of the population below the LBPL has been projected based on GDP growth and its impact on employment and hence income distribution of individuals aged 18 to 59.
    3. **Upper Bound Poverty Lin**e: the number of individuals aged 18 to 59 who fall below the UBPL line based on the StatsSA General Household Survey (2018). The proportion of the population below the UBPL has been projected based on GDP growth and its impact on employment and hence income distribution of individuals aged 18 to 59.
    4. **Youth**: two youth groups have been considered – the number of individuals aged between 18 and 21 as well as aged between 18 and 24.

- **Phased-in approach to achieving universal coverage by 2030 (phased-in coverage)**: recipients under the phased-in approach to achieving universal coverage of the BIG are as follows:

[41] https://data.worldbank.org/indicator/SI.POV.GINI?locations=ZA&most_recent_year_desc=true

- 2020/21: individuals who would be eligible to receive the OAG given the extension of the OAG to include individuals aged 58 and 59.
- 2021/22 to 2024/25: individuals who would be eligible to receive the OAG given the extension of the OAG to include individuals 55 to 59.

5. **2023/24 to 2024/25**: recipients of the BIG defined as the number of unemployed individuals aged 18 to 55 has been based on employment estimates as per the StatsSA Quarterly Labour Force Survey for Quarters 2 to 4, 2019 and Quarter 1, 2020 for the base fiscal year. Unemployment has been defined as those individuals who are unemployed and discouraged work seekers, including those in informal employment.

Targeting is associated with the administration burden and cost created by applying this targeting in practice. It is noted that certain of the targeted scenarios presented above may not be practical to implement in relation to targeting and therefore should be considered for illustrative purposes only.

2.2.1.2. Funding of the Basic Income Grant

The direct cost of the BIG drives the funding requirement for the BIG. The funding required has been assessed through estimating the impact on South Africa's three main sources of general tax revenue, namely, Personal Income Tax (PIT), Value-Added Tax (VAT) and Corporate Income Tax (CIT). These three tax instruments accounted for 80.1% of gross tax revenue in 2019/20 as per the 2020 Budget Review, with PIT contributing 40%, VAT contributing 17% and PIT contributing 26% of gross tax revenue.

The increased requirement in respect of PIT, VAT and CIT has been estimated as follows:

- **PIT**: the resultant increase in PIT has been based on projected PIT receipts over the projection period.
- **VAT**: the resultant increase in VAT required has been estimated based on projected VAT receipts over the projection period.
- **CIT**: the resultant increase in CIT required has been estimated based on projected CIT receipts over the projection period.

2.2.1.3. Redistribution and Economic Impact of Implementing the Basic Income Grant in South Africa

The BIG has the potential to lower inequality through the transfer of income from rich households to poor households. This can be done via the current progressive PIT mechanism. An analysis has been performed allowing for universal coverage of the BIG with a corresponding increase in PIT to fund the BIG to illustrate the redistributive and possible positive economic impacts of the BIG. The transmission mechanism underlying the analysis is as follows:

- The BIG represents a distribution of income across households in the economy when funded through PIT.
- Individuals' aged 18 to 59 in households receive the BIG. Therefore, all households benefit from BIG receipt.
- Taxation is paid by the richer households' income deciles. This results in an offsetting of the BIG contribution, with a progressive tax meaning that richer households have a 'negative' net grant receipt, resulting in a decline in income. This represents a transfer of income from richer to poorer.
- The transfer of income across from rich to poor results in a rise in income levels for the poorer households with a consequent reduction in income levels for richer households.
- The rise in income allows poorer households to increase consumption across their expenditure baskets while the decrease in income in wealthier households results in a relative reduction in their consumption.
- This increase in demand leads to an increase in downstream demand for goods, which leads to an increase in wages and subsequent income across households. Similarly, there is a reduction in income at higher income levels which leads to a decrease in demand for goods which higher income households consume more of. However, multiplier effects illustrate knock-on effects to higher income households, which may raise their overall income and subsequent demand.

Such a redistribution of income will have positive economic impacts if the net impact of the mechanism described above is positive, that is, the impact of the rise in income for poorer households is greater than the impact of the decrease in income for wealthier households.

The multiplier model was constructed using a Social Accounting Matrix (SAM) multiplier model, based on data for 2015 (Van Seventer, *et al*., 2019). This is designed to simulate a 62 sector, 104 product economy. Firms hire labour (broken down by skill level) to produce products, and labour pays households. Households can also earn income from government (grants), foreign income (remittances or foreign ownership), capital income, and enterprise income. Households then spend their income on products and pay tax.

The model is grounded in input-output frameworks and based on a Leontief matrix construction to determine multipliers, which tracks the interactions across the economy. The Leontief multiplier matrix is multiplied by various shocks to achieve outcomes. To achieve the simulation of a BIG, the simulation takes the estimated contribution of the BIG per household income decile and uses this as a government transfer to shock households. As shown above, richer, tax-paying households receive a negative BIG shock given that these households pay more in tax than what they receive in grant value. The overall BIG impact, including the possible impact on GDP growth and employment, is calculated by using matrix multiplication between the Leontief matrix and the exogenous (income grant) shock of government transfers to households.

The shock used of an increase in government spending has been assumed to be offset by a corresponding increase in tax revenue. It is noted that the cost of the BIG will undoubtedly add to South Africa's current debt levels if a budget-neutral approach is not followed if the resultant increase in taxes or introduction of new taxes to fund the BIG does not yield the required additional tax revenue. This will result in an additional burden to the fiscus either through increased borrowing or a reallocation of other government expenditure, which is not modelled in the SAM multiplier framework. The option of increased borrowing is limited given that South Africa's budget deficit is estimated to be 15.7% of GDP for 2020/21 (2020 Supplementary Budget Review) and fears that South Africa is approaching a fiscal cliff.

2.2.2. Assumptions

The main assumptions are GDP growth, tax revenue growth, employment elasticity and Consumer Price Index (CPI) inflation.

Forecasts with respect to these assumptions have been sourced from the International Monetary Fund (IMF)[42], with author calculations used to extrapolate forecasts. It is noted that the forecasts obtained from the IMF are in line with the 2020 Supplementary Budget Review and are set out in the table below:

Table 2: Financial Feasibility Assumptions (Base Growth Scenario)

R'million	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Real GDP Growth	0.2%	-7.2%	2.6%	1.5%	1.5%	2.1%
Unemployment Rate	28.7%	36.4%	36.1%	36.6%	37.1%	37.2%
Tax Revenue (R million)	1 305	1 058	1 242	1 375	1 479	1 600
Tax Revenue as a % of GDP	25.5%	21.8%	23.7%	24.7%	25.1%	25.5%
CPI	4.1%	3.0%	3.9%	4.3%	4.5%	4.5%

A further scenario has been included allowing for GDP growth of 4.0% per annum from 2021/22 to 2024/25 representing a "high road" with respect to GDP growth and employment after 2020/21. The resultant impact on unemployment has been determined applying an employment elasticity to GDP growth. Employment elasticity is a measure of the percentage change in employment associated with a one percentage point change in GDP growth. It indicates the ability of an economy to generate employment opportunities for its population through GDP growth.

[42] IMF, 2020. *"South Africa: Request for Purchase Under the Rapid Financing Instrument-Press Release"*. Available online: https://www.imf.org/en/Publications/CR/Issues/2020/07/28/South-Africa-Request-for-Purchase-Under-the-Rapid- Financing-Instrument-Press-Release-Staff-49612

An employment elasticity of 0.7 was used in the High Road Scenario (Altman (2020)). As per Altman (2020), employment elasticity has been approximately 0.6 to 0.7 in South Africa over the last 30 years.

It is noted that higher employment elasticity is evident during 2020/21 as per the Base Growth Scenario and High Road Scenario, meaning that the decline in output has an unusually significant impact on employment compared to historical trends. This results from the constraints imposed on labour intensive activity, and the especially destructive impact of the lockdown on small and medium sized firms. From 2021/22, it is assumed that employment does not bounce back at the same rate as businesses fail or scale back and rather reverts to its long-term average.

Tax revenue is assumed to increase to 23.75% of nominal GDP in 2021/22 and 25.87% of nominal GDP over the period 2022/23 to 2024/25. This allows for tax buoyancy, which measures the responsiveness of tax revenue to GDP growth, of 1. This is in line with tax buoyancy forecasts by the National Treasury as per the 2020 Budget Review Statement which were deemed suitable for the High Road Scenario. CPI inflation is assumed to equal 4.8% over the period 2021/22 to 2024/25, moving towards the upper limit of the South African Reserve Bank's inflation target band (3% to 6%).

Table 3: Financial Feasibility Assumptions (High Road Scenario)

R'million	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Real GDP Growth	0.2%	-7.2%	4.0%	4.0%	4.0%	4.0%
Unemployment Rate	28.7%	36.4%	35.2%	32.4%	29.6%	26.9%
Tax Revenue (R million)	1 305	1 058	1 476	1 608	1 752	1 908
Tax Revenue as a % of GDP	25.5%	21.8%	23.7%	25.9%	25.9%	25.9%
CPI	4.1%	3.0%	4.8%	4.8%	4.8%	4.8%

2.3. Analysis of the BIG Beneficiaries Projections

2.3.1. Base Growth Scenario

The following table sets out the projected number of beneficiaries of the BIG over the projection period under the various scenarios considered:

Table 4: BIG Beneficiaries per Scenario (Base Growth Scenario)

R'million	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	33 774 481	34 252 250	34 730 955	35 205 899	35 692 744	36 227 852
Unemployed	19 506 391	21 604 878	21 852 999	22 295 105	22 764 957	23 148 681
LBPL	19 942 610	21 991 547	22 246 718	22 689 827	23 160 199	23 548 551
UBPL	21 095 253	23 013 261	23 287 059	23 732 821	24 204 566	24 605 147
Youth (age 21)	3 829 675	3 839 724	3 869 654	3 928 580	4 009 279	4 095 800
Youth (age 24)	6 778 186	6 743 371	6 737 806	6 774 937	6 856 402	6 975 957
Phased-in Coverage	-	-	-	-	13 251 553	13 448 508

The following table sets out the number of additional OAG recipients (30% and 50% coverage) arising under the Phased-in Coverage Scenario:

Table 5: Phased-in Coverage – OAG Beneficiaries (Base Growth Scenario)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
OAG recipients (30% coverage)	263 101	267 672	679 494	686 925	693 199	700 459
OAG recipients (50% coverage)	438 502	446 119	1 132 489	1 144 875	1 155 332	1 167 431

The following table sets out the proportion of projected number of beneficiaries of the BIG that are female over the projection period under the various scenarios considered:

Table 6: Proportion of BIG Beneficiaries that are Female per Scenario

R'million	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	50.7%	50.6%	50.5%	50.4%	50.3%	50.2%
Unemployed	55.3%	54.2%	54.1%	53.9%	53.7%	53.6%
LBPL	55.8%	54.7%	54.6%	54.3%	54.1%	54.0%
UBPL	55.2%	54.2%	54.1%	53.9%	53.8%	53.6%
Youth (age 21)	49.7%	49.7%	49.7%	49.7%	49.7%	49.7%
Youth (age 24)	49.6%	49.6%	49.6%	49.6%	49.7%	49.7%
Phased-in Coverage	-	-	-	-	53.7%	53.6%

As can be seen from the table above, the proportion of female BIG beneficiaries is higher under the unemployed scenarios and the LBPL and UBPL than under the universal scenario. This is a result of the higher proportion of unemployed females compared to males (32.4% of females were unemployed, while 28.3% of males were unemployed in Quarter 1, 2020), particularly in relation to formal employment and consequently a higher proportion of females falling under the LBPL and UBPL, respectively.

2.3.2. High Road Scenario

The following table sets out the projected number of beneficiaries of the BIG over the projection period under the various scenarios considered:

Table 7: BIG Beneficiaries per Scenario (High Road Scenario)

R'million	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	33 774 481	34 252 250	34 730 955	35 205 899	35 692 744	36 227 852
Unemployed	19 506 391	21 604 878	21 729 458	21 367 362	20 967 659	20 564 851
LBPL	19 942 610	21 991 547	21 680 906	21 324 626	20 922 185	20 481 091
UBPL	21 095 253	23 013 261	22 768 398	22 481 386	22 153 051	21 793 307
Youth (age 21)	3 829 675	3 839 724	3 869 654	3 928 580	4 009 279	4 095 800
Youth (age 24)	6 778 186	6 743 371	6 737 806	6 774 937	6 856 402	6 975 957
Phased-in Coverage	-	-	-	-	11 584 405	11 171 406

The number of additional OAG recipients (30% and 50% coverage) arising under the Phased-in Coverage Scenario are in line with **Table 5** in Section **2.3.1** due to the number of additional OAG recipients being independent of economic growth and impact on employment.

2.4. Analysis of the Cost of Implementing the Basic Income Grant in South Africa

2.4.1. Base Growth Scenario

The following tables set out the projected cost of implementing the BIG allowing for the various scenarios set out in Section 2.3 above, in relation to a BIG amount in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL, the UBPL and R500 per month with respect to the Phased-in Coverage Scenario.

Table 8: Base Growth Scenario – Nominal Cost of BIG per Scenario (special COVID-19 Social Relief of Distress Grant)

R'million	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	141 853	143 859	151 559	160 238	169 764	180 063
Unemployed	81 927	90 740	95 362	101 475	108 276	115 056
LBPL	83 759	92 364	97 080	103 271	110 156	117 043
UBPL	88 600	96 656	101 620	108 019	115 123	122 295
Youth (age 21)	16 085	16 127	16 886	17 881	19 069	20 357
Youth (age 24)	28 468	28 322	29 402	30 836	32 611	34 673

Table 9: Base Growth Scenario – Nominal Cost of BIG per Scenario (LBPL)

R'million	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	328 288	345 263	363 741	384 570	407 433	432 151
Unemployed	189 602	217 777	228 869	243 540	259 862	276 134
LBPL	193 842	221 675	232 993	247 852	264 374	280 904
UBPL	205 046	231 974	243 888	259 245	276 296	293 507
Youth (age 21)	37 224	38 704	40 527	42 914	45 766	48 858
Youth (age 24)	65 884	67 973	70 566	74 006	78 266	83 214

Table 10: Base Growth Scenario – Nominal Cost of BIG per Scenario (UBPL)

R'million	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	497 295	521 182	553 568	587 792	624 227	663 681
Unemployed	287 212	328 740	339 007	348 724	357 759	366 108
LBPL	293 635	334 623	345 567	356 033	365 906	375 206
UBPL	310 607	350 170	362 900	375 346	387 433	399 245
Youth (age 21)	56 388	58 425	61 677	65 591	70 118	75 034
Youth (age 24)	99 802	102 607	107 392	113 113	119 911	127 797

Table 11: Base Growth Scenario – Nominal Cost of BIG per Scenario (Phased-in Coverage)

R'million	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Phased-in Coverage	-	-	-	-	90 040	95 490

Table 12: Base Growth Scenario – Nominal Cost of OAG (Phased-in Coverage)

R'million	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
OAG recipients (30% coverage)	461	488	1 296	1 363	1 469	1 551
OAG recipients (50% coverage)	768	814	2 160	2 271	2 448	2 585

The following table sets out the projected clawback of the cost of implementing the BIG through PIT under the universal scenario, in relation to a BIG amount in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL and the UBPL.

Table 13: Base Growth Scenario – Claw Back of Nominal Cost of BIG (Universal)

R'million	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Special COVID-19 Social Relief of Distress Grant	6 878	6 975	7 348	7 769	8 231	8 730
LBPL	15 917	16 740	17 636	18 646	19 755	20 953
UBPL	24 112	25 270	26 622	28 147	29 820	31 629

The projected clawback of the cost of implementing the BIG through PIT under the universal scenario represents approximately 5% of the cost of a universal BIG.

2.4.2. High Road Scenario

The following tables set out the projected cost of implementing the BIG allowing for the various scenarios set out in Section **2.3** above, in relation to a BIG amount in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL, the UBPL and R500 per month with respect to the Phased-in Coverage Scenario.

Table 14: High Road Scenario – Nominal Cost of BIG per Scenario (special COVID-19 Social Relief of Distress Grant)

R'million	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	141 853	143 859	152 799	162 246	172 302	183 193
Unemployed	81 927	90 740	95 599	98 471	101 219	103 990
LBPL	83 759	92 364	95 385	98 274	100 999	103 566
UBPL	88 600	96 656	100 170	103 605	106 941	110 202
Youth (age 21)	16 085	16 127	17 025	18 105	19 354	20 711
Youth (age 24)	28 468	28 322	29 643	31 222	33 098	35 275

Table 15: High Road Scenario – Nominal Cost of BIG per Scenario (LBPL)

R'million	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	328 288	345 263	366 717	389 389	413 526	439 662
Unemployed	189 602	217 777	229 437	236 330	242 925	249 576
LBPL	193 842	221 675	228 924	235 858	242 398	248 559
UBPL	205 046	231 974	240 407	248 652	256 659	264 484
Youth (age 21)	37 224	38 704	40 859	43 451	46 450	49 707
Youth (age 24)	65 884	67 973	71 143	74 933	79 436	84 660

Table 16: High Road Scenario – Nominal Cost of BIG per Scenario (UBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	497 295	521 182	553 568	587 792	624 227	663 681
Unemployed	287 212	328 740	346 341	356 746	366 701	376 740
LBPL	293 635	334 623	345 567	356 033	365 906	375 206
UBPL	310 607	350 170	362 900	375 346	387 433	399 245
Youth (age 21)	56 388	58 425	61 677	65 591	70 118	75 034
Youth (age 24)	99 802	102 607	107 392	113 113	119 911	127 797

Table 17: High Road Scenario – Nominal Cost of BIG per Scenario (Phased-in Coverage)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Phased-in Coverage	-	-	-	-	79 889	80 700

The cost of the additional OAG recipients (30% and 50% coverage) arising under the Phased-in Coverage Scenario are in line with **Table 12** in Section **2.4.1**.

The cost of implementing a BIG under the High Road Scenario under the universal and youth scenarios is higher than under the Base Growth Scenario given the high assumption in relation to inflation resulting in higher levels of the BIG over the period considered.

The following table sets out the projected claw back of the cost of implementing the BIG through PIT under the universal scenario, in relation to a BIG amount in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL and the UBPL.

Table 18: High Road Scenario – Claw Back of Nominal Cost of BIG (Universal)

R'million	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Special COVID-19 Social Relief of Distress Grant	6 878	6 975	7 409	7 867	8 354	8 882
LBPL	15 917	16 740	17 780	18 880	20 050	21 317
UBPL	24 112	25 270	26 840	28 499	30 266	32 179

The projected claw back of the cost of implementing the BIG through PIT under the universal scenario represents approximately 5% of the cost of a universal BIG.

Under the High Road Scenario, the impact of higher GDP growth and consequent impact on employment and tax receipts, results in a reduction in beneficiaries where the unemployed are targeted and related cost as well as in increase in the resultant claw back of the cost of the BIG under universal coverage.

2.5. Analysis of the Resulting Impact on Tax of Implementing the Basic Income Grant in South Africa

The projected cost of implementing the BIG compared to PIT/CIT and VAT receipts over the projection period are considered in this section. It is noted that decisions regarding the increasing of revenue from these sources cannot be taken independently of an assessment of the possible economic impacts resulting from increasing PIT, CIT and VAT rates. For example, high marginal PIT tax rates may discourage work, saving, investment, and innovation.

2.5.1. Comparison of Cost in relation to PIT

2.5.1.1. Base Growth Scenario

The following tables set out the projected cost of implementing the BIG compared to PIT receipts (nominal) allowing for the various scenarios set out in Section 2.3 above, in relation to a BIG amount in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL, the UBPL and R500 per month with respect to the Phased-in Coverage Scenario.

Table 19: Base Growth Scenario – Cost of BIG per Scenario compared to PIT Receipts (special COVID-19 Social Relief of Distress Grant)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	26.9%	35.4%	31.8%	30.2%	29.4%	28.9%
Unemployed	15.5%	22.4%	20.0%	19.1%	18.8%	18.4%
LBPL	15.9%	22.8%	20.3%	19.4%	19.1%	18.8%
UBPL	16.8%	23.8%	21.3%	20.3%	20.0%	19.6%
Youth (age 21)	3.0%	4.0%	3.5%	3.4%	3.3%	3.3%
Youth (age 24)	5.4%	7.0%	6.2%	5.8%	5.7%	5.6%

Table 20: Base Growth Scenario – Cost of BIG per Scenario compared to PIT Receipts (LBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	62.2%	85.1%	76.2%	72.4%	70.6%	69.3%
Unemployed	35.9%	53.7%	47.9%	45.9%	45.1%	44.3%
LBPL	36.7%	54.6%	48.8%	46.7%	45.8%	45.0%
UBPL	38.9%	57.2%	51.1%	48.8%	47.9%	47.0%
Youth (age 21)	7.1%	9.5%	8.5%	8.1%	7.9%	7.8%
Youth (age 24)	12.5%	16.7%	14.8%	13.9%	13.6%	13.3%

Table 21: Base Growth Scenario – Cost of BIG per Scenario compared to PIT Receipts (UBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	94.3%	128.4%	115.0%	109.3%	106.6%	104.5%
Unemployed	54.4%	81.0%	72.4%	69.2%	68.0%	66.8%
LBPL	55.7%	82.5%	73.7%	70.5%	69.2%	68.0%
UBPL	58.9%	86.3%	77.1%	73.7%	72.3%	71.0%
Youth (age 21)	10.7%	14.4%	12.8%	12.2%	12.0%	11.8%
Youth (age 24)	18.9%	25.3%	22.3%	21.0%	20.5%	20.1%

Table 22: Base Growth Scenario – Cost of BIG per Scenario compared to PIT Receipts (Phased-in Coverage)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Phased-in Coverage	0.0%	0.0%	0.0%	0.0%	15.6%	15.3%

The following tables set out the increase in effective tax rates per income band for 2023/24 allowing for the projected cost of implementing the BIG allowing for the various scenarios set out in Section 2.3 above, in relation to a BIG amount in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL and the UBPL.

Table 23: Base Growth Scenario – Increase in Effective Tax Rates per Income Band for 2023/24 (special COVID-19 Social Relief of Distress Grant)

		Increase in Effective Tax Rate					
Taxable Income Band R'000	Effective Tax Rate (2020/21)	Universal	Unemployed	LBPL	UBPL	Youth (age 21)	Youth (age 24)
R0 - R80	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
R80 - R150	3.9%	1.1%	0.7%	0.7%	0.8%	0.1%	0.2%
R150 - R250	9.7%	2.9%	1.8%	1.9%	1.9%	0.3%	0.6%
R250 - R350	15.2%	4.5%	2.9%	2.9%	3.0%	0.5%	0.9%
R350 - R500	17.5%	5.2%	3.3%	3.3%	3.5%	0.6%	1.0%
R500 - R750	23.9%	7.0%	4.5%	4.6%	4.8%	0.8%	1.4%
R750 - R1 000	29.1%	8.6%	5.5%	5.6%	5.8%	1.0%	1.6%
R1 000 - R1 500	30.4%	8.9%	5.7%	5.8%	6.1%	1.0%	1.7%
R1 500 +	42.7%	12.6%	8.0%	8.2%	8.5%	1.4%	2.4%

Table 24: Base Growth Scenario – Increase in Effective Tax Rates per Income Band for 2023/24 (LBPL)

		Increase in Effective Tax Rate					
Taxable Income Band R'000	Effective Tax Rate (2020/21)	Universal	Unemployed	LBPL	UBPL	Youth (age 21)	Youth (age 24)
R0 - R80	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
R80 - R150	3.9%	2.7%	1.8%	1.8%	1.9%	0.3%	0.5%
R150 - R250	9.7%	6.9%	4.4%	4.5%	4.7%	0.8%	1.3%
R250 - R350	15.2%	10.7%	6.8%	7.0%	7.3%	1.2%	2.1%
R350 - R500	17.5%	12.4%	7.9%	8.0%	8.4%	1.4%	2.4%
R500 - R750	23.9%	16.9%	10.8%	11.0%	11.5%	1.9%	3.2%
R750 - R1 000	29.1%	20.5%	13.1%	13.3%	13.9%	2.3%	3.9%
R1 000 - R1 500	30.4%	21.4%	13.7%	13.9%	14.5%	2.4%	4.1%
R1 500 +	42.7%	30.2%	19.2%	19.6%	20.5%	3.4%	5.8%

Table 25: Base Growth Scenario – Increase in Effective Tax Rates per Income Band for 2023/24 (UBPL)

		Increase in Effective Tax Rate					
Taxable Income Band R'000	Effective Tax Rate (2020/21)	Universal	Unemployed	LBPL	UBPL	Youth (age 21)	Youth (age 24)
R0 - R80	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
R80 - R150	3.9%	4.1%	2.6%	2.7%	2.8%	0.5%	0.8%
R150 - R250	9.7%	10.4%	6.6%	6.7%	7.0%	1.2%	2.0%
R250 - R350	15.2%	16.2%	10.3%	10.5%	11.0%	1.8%	3.1%
R350 - R500	17.5%	18.7%	11.9%	12.1%	12.7%	2.1%	3.6%
R500 - R750	23.9%	25.5%	16.3%	16.5%	17.3%	2.9%	4.9%
R750 - R1 000	29.1%	31.0%	19.8%	20.1%	21.0%	3.5%	6.0%
R1 000 - R1 500	30.4%	32.4%	20.6%	21.0%	22.0%	3.6%	6.2%
R1 500 +	42.7%	45.6%	29.1%	29.6%	30.9%	5.1%	8.8%

Table 26: Base Growth Scenario – Increase in Effective Tax Rates per Income Band for 2023/24 (Phased-in Coverage)

	Increase in Effective Tax Rate	
Taxable Income Band R'000	Effective Tax Rate (2020/21)	Phased-in Coverage
R0 - R80	0.0%	0.0%
R80 - R150	3.9%	0.6%
R150 - R250	9.7%	1.5%
R250 - R350	15.2%	2.4%
R350 - R500	17.5%	2.7%

	Increase in Effective Tax Rate	
Taxable Income Band R'000	Effective Tax Rate (2020/21)	Phased-in Coverage
R0 - R80	0.0%	0.0%
R80 - R150	3.9%	0.6%
R150 - R250	9.7%	1.5%
R500 - R750	23.9%	3.7%
R750 - R1 000	29.1%	4.5%
R1 000 - R1 500	30.4%	4.7%
R1 500 +	42.7%	6.7%

If funded through PIT, a universal BIG at the level of the special COVID-19 Social Relief of Distress Grant would result in an approximate average increase in effective tax rates of 8.2% across taxable income bands considered for 2023/24. A universal BIG at the LBPL would result in an approximate average increase in effective tax rates of 19.8% across taxable income bands considered for 2023/24. A universal BIG at the UBPL would result in an approximate average increase in effective tax rates of 30.0% across taxable income bands considered for 2020/21.

2.5.1.2. High Road Scenario

The following tables set out the projected cost of implementing the BIG compared to PIT receipts (nominal) allowing for the various scenarios set out in Section **2.3** above, in relation to a BIG amount in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL, the UBPL and R 500 per month with respect to the Phased-in Coverage Scenario.

Table 27: High Road Scenario – Cost of BIG per Scenario compared to PIT Receipts (special COVID-19 Social Relief of Distress Grant)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	26.9%	35.4%	31.5%	28.2%	27.5%	26.8%
Unemployed	15.5%	22.4%	19.7%	17.1%	16.1%	15.2%
LBPL	15.9%	22.8%	19.7%	17.1%	16.1%	15.2%
UBPL	16.8%	23.8%	20.7%	18.0%	17.1%	16.1%
Youth (age 21)	3.0%	4.0%	3.5%	3.1%	3.1%	3.0%
Youth (age 24)	5.4%	7.0%	6.1%	5.4%	5.3%	5.2%

Table 28: High Road Scenario – Cost of BIG per Scenario compared to PIT Receipts (LBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	62.2%	85.1%	75.6%	67.7%	66.0%	64.4%
Unemployed	35.9%	53.7%	47.3%	41.1%	38.7%	36.5%
LBPL	36.7%	54.6%	47.2%	41.0%	38.7%	36.4%
UBPL	38.9%	57.2%	49.6%	43.2%	40.9%	38.7%
Youth (age 21)	7.1%	9.5%	8.4%	7.6%	7.4%	7.3%
Youth (age 24)	12.5%	16.7%	14.7%	13.0%	12.7%	12.4%

Table 29: High Road Scenario – Cost of BIG per Scenario compared to PIT Receipts (UBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	94.3%	128.4%	114.2%	102.1%	99.6%	97.2%
Unemployed	54.4%	81.0%	71.4%	62.0%	58.5%	55.2%
LBPL	55.7%	82.5%	71.3%	61.9%	58.4%	54.9%
UBPL	58.9%	86.3%	74.8%	65.2%	61.8%	58.5%
Youth (age 21)	10.7%	14.4%	12.7%	11.4%	11.2%	11.0%
Youth (age 24)	18.9%	25.3%	22.1%	19.7%	19.1%	18.7%

Table 30: High Road Scenario – Cost of BIG per Scenario compared to PIT Receipts (Phased-in Coverage)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Phased-in Coverage	0.0%	0.0%	0.0%	0.0%	12.5%	11.5%

The following tables set out the increase in effective tax rates per income band for 2023/24 allowing for the projected cost of implementing the BIG allowing for the various scenarios set out in Section 2.3 above, in relation to a BIG amount in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL and the UBPL.

Table 31: High Road Scenario – Increase in Effective Tax Rates per Income Band for 2023/24 (special COVID-19 Social Relief of Distress Grant)

Taxable Income Band R'000	Effective Tax Rate (2020/21)	Increase in Effective Tax Rate					
		Universal	Unemployed	LBPL	UBPL	Youth (age 21)	Youth (age 24)
R0 - R80	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
R80 - R150	3.9%	1.1%	0.6%	0.6%	0.7%	0.1%	0.2%
R150 - R250	9.7%	2.7%	1.6%	1.6%	1.7%	0.3%	0.5%
R250 - R350	15.2%	4.2%	2.4%	2.4%	2.6%	0.5%	0.8%
R350 - R500	17.5%	4.8%	2.8%	2.8%	3.0%	0.5%	0.9%
R500 - R750	23.9%	6.6%	3.8%	3.9%	4.1%	0.7%	1.3%
R750 - R1 000	29.1%	8.0%	4.7%	4.7%	5.0%	0.9%	1.5%
R1 000 - R1 500	30.4%	8.3%	4.9%	4.9%	5.2%	0.9%	1.6%
R1 500 +	42.7%	11.7%	6.9%	6.9%	7.3%	1.3%	2.3%

Table 32: High Road Scenario – Increase in Effective Tax Rates per Income Band for 2023/24 (LBPL)

Taxable Income Band R'000	Effective Tax Rate (2020/21)	Increase in Effective Tax Rate					
		Universal	Unemployed	LBPL	UBPL	Youth (age 21)	Youth (age 24)
R0 - R80	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
R80 - R150	3.9%	2.6%	1.5%	1.5%	1.6%	0.3%	0.5%
R150 - R250	9.7%	6.4%	3.8%	3.8%	4.0%	0.7%	1.2%
R250 - R350	15.2%	10.0%	5.9%	5.9%	6.2%	1.1%	1.9%
R350 - R500	17.5%	11.6%	6.8%	6.8%	7.2%	1.3%	2.2%
R500 - R750	23.9%	15.8%	9.2%	9.2%	9.8%	1.8%	3.0%
R750 - R1 000	29.1%	19.2%	11.2%	11.2%	11.9%	2.2%	3.7%
R1 000 - R1 500	30.4%	20.0%	11.7%	11.7%	12.4%	2.2%	3.8%
R1 500 +	42.7%	28.2%	16.5%	16.5%	17.5%	3.2%	5.4%

Table 33: High Road Scenario – Increase in Effective Tax Rates per Income Band for 2023/24 (UBPL)

Taxable Income Band R'000	Effective Tax Rate (2020/21)	Increase in Effective Tax Rate					
		Universal	Unemployed	LBPL	UBPL	Youth (age 21)	Youth (age 24)
R0 - R80	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
R80 - R150	3.9%	3.9%	2.3%	2.3%	2.4%	0.4%	0.7%
R150 - R250	9.7%	9.7%	5.7%	5.7%	6.0%	1.1%	1.9%
R250 - R350	15.2%	15.1%	8.9%	8.9%	9.4%	1.7%	2.9%
R350 - R500	17.5%	17.5%	10.2%	10.2%	10.8%	2.0%	3.4%
R500 - R750	23.9%	23.8%	13.9%	13.9%	14.8%	2.7%	4.6%
R750 - R1 000	29.1%	29.0%	17.0%	17.0%	18.0%	3.3%	5.6%
R1 000 - R1 500	30.4%	30.2%	17.7%	17.7%	18.8%	3.4%	5.8%
R1 500 +	42.7%	42.5%	24.9%	24.9%	26.4%	4.8%	8.2%

Table 34: High Road Scenario – Increase in Effective Tax Rates per Income Band for 2023/24 (Phased-in Coverage)

Taxable Income Band R'000	Effective Tax Rate (2020/21)	Increase in Effective Tax Rate
		Phased-in Coverage
R0 - R80	0.0%	0.0%
R80 - R150	3.9%	0.5%
R150 - R250	9.7%	1.2%
R250 - R350	15.2%	1.9%
R350 - R500	17.5%	2.2%
R500 - R750	23.9%	3.0%
R750 - R1 000	29.1%	3.7%
R1 000 - R1 500	30.4%	3.9%
R1 500 +	42.7%	5.4%

2.5.2. Comparison of Cost in relation to CIT

2.5.2.1. Base Growth Scenario

The following tables set out the projected cost of implementing the BIG compared to CIT receipts (nominal) allowing for the various scenarios set out in Section 2.3 above, in relation to a BIG amount in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL, the UBPL and R 500 per month with respect to the Phased-in Coverage Scenario.

Table 35: Base Growth Scenario – Cost of BIG per Scenario compared to CIT Receipts

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	65.5%	84.2%	75.7%	72.6%	70.7%	69.3%
Unemployed	37.8%	53.1%	47.6%	46.0%	45.1%	44.3%
LBPL	38.6%	54.1%	48.5%	46.8%	45.9%	45.1%
UBPL	40.9%	56.6%	50.8%	48.9%	47.9%	47.1%
Youth (age 21)	7.4%	9.4%	8.4%	8.1%	7.9%	7.8%
Youth (age 24)	13.1%	16.6%	14.7%	14.0%	13.6%	13.3%

Table 36: Base Growth Scenario – Cost of BIG per Scenario compared to CIT Receipts (LBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	151.5%	202.0%	181.7%	174.3%	169.7%	166.3%
Unemployed	87.5%	127.4%	114.4%	110.4%	108.2%	106.3%
LBPL	89.4%	129.7%	116.4%	112.3%	110.1%	108.1%
UBPL	94.6%	135.8%	121.9%	117.5%	115.1%	113.0%
Youth (age 21)	17.2%	22.6%	20.2%	19.4%	19.1%	18.8%
Youth (age 24)	30.4%	39.8%	35.3%	33.5%	32.6%	32.0%

Table 37: Base Growth Scenario – Cost of BIG per Scenario compared to CIT Receipts (UBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	229.5%	305.0%	274.3%	263.0%	256.1%	251.1%
Unemployed	132.5%	192.4%	172.6%	166.6%	163.4%	160.5%
LBPL	135.5%	195.8%	175.7%	169.5%	166.2%	163.2%
UBPL	143.3%	204.9%	183.9%	177.3%	173.7%	170.5%
Youth (age 21)	26.0%	34.2%	30.6%	29.4%	28.8%	28.4%
Youth (age 24)	46.1%	60.0%	53.2%	50.6%	49.2%	48.4%

Table 38: Base Growth Scenario – Cost of BIG per Scenario compared to CIT Receipts (Phased-in Coverage)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Phased-in Coverage	0.0%	0.0%	0.0%	0.0%	37.5%	36.8%

2.5.2.2. High Road Scenario

The following tables set out the projected cost of implementing the BIG compared to CIT receipts (nominal) allowing for the various scenarios set out in Section 2.3 above, in relation to a BIG amount in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL, the UBPL and R 500 per month with respect to the Phased-in Coverage Scenario.

Table 39: High Road Scenario – Cost of BIG per Scenario compared to CIT Receipts (special COVID-19 Social Relief of Distress Grant)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	65.5%	84.2%	75.7%	67.7%	66.0%	64.4%
Unemployed	37.8%	53.1%	47.3%	41.1%	38.8%	36.6%
LBPL	38.6%	54.1%	47.2%	41.0%	38.7%	36.4%
UBPL	40.9%	56.6%	49.6%	43.2%	41.0%	38.8%
Youth (age 21)	7.4%	9.4%	8.4%	7.6%	7.4%	7.3%
Youth (age 24)	13.1%	16.6%	14.7%	13.0%	12.7%	12.4%

Table 40: High Road Scenario – Cost of BIG per Scenario compared to CIT Receipts (LBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	151.5%	202.0%	181.6%	162.5%	158.4%	154.6%
Unemployed	87.5%	127.4%	113.6%	98.6%	93.1%	87.8%
LBPL	89.4%	129.7%	113.4%	98.4%	92.9%	87.4%
UBPL	94.6%	135.8%	119.1%	103.8%	98.3%	93.0%
Youth (age 21)	17.2%	22.6%	20.2%	18.1%	17.8%	17.5%

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	151.5%	202.0%	181.6%	162.5%	158.4%	154.6%
Unemployed	87.5%	127.4%	113.6%	98.6%	93.1%	87.8%
LBPL	89.4%	129.7%	113.4%	98.4%	92.9%	87.4%
UBPL	94.6%	135.8%	119.1%	103.8%	98.3%	93.0%
Youth (age 24)	30.4%	39.8%	35.2%	31.3%	30.4%	29.8%

Table 41: High Road Scenario – Cost of BIG per Scenario compared to CIT Receipts (UBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	229.5%	305.0%	274.2%	245.3%	239.1%	233.4%
Unemployed	132.5%	192.4%	171.5%	148.9%	140.5%	132.5%
LBPL	135.5%	195.8%	171.2%	148.6%	140.2%	131.9%
UBPL	143.3%	204.9%	179.7%	156.6%	148.4%	140.4%
Youth (age 21)	26.0%	34.2%	30.5%	27.4%	26.9%	26.4%
Youth (age 24)	46.1%	60.0%	53.2%	47.2%	45.9%	44.9%

Table 42: High Road Scenario – Cost of BIG per Scenario compared to CIT Receipts (Phased-in Coverage)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Phased-in Coverage	0.0%	0.0%	0.0%	0.0%	30.6%	28.4%

If funded through CIT, a universal BIG at the level of the special COVID-19 Social Relief of Distress Grant would result in an approximate increase of 84.2% to expected CIT receipts in 2020/21 decreasing to 64.4% in 2024/25 as a result of higher tax revenues expected and a proportion of GDP. The increase in expected CIT receipts in 2020/21 under a universal BIG at the level of the LBPL and UBPL increases to 202% and 305% respectively.

2.5.3. Comparison of Cost in relation to VAT

2.5.3.1. Base Growth Scenario

The following tables set out the projected cost of implementing the BIG compared to VAT receipts (nominal) allowing for the various scenarios set out in Section **2.3** above, in relation to a BIG amount in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL, the UBPL and R 500 per month with respect to the Phased-in Coverage Scenario.

Table 43: Base Growth Scenario – Cost of BIG per Scenario compared to VAT Receipts (special COVID-19 Social Relief of Distress Grant)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	41.2%	53.8%	48.3%	46.2%	44.9%	44.1%
Unemployed	23.8%	33.9%	30.4%	29.3%	28.7%	28.2%
LBPL	24.3%	34.5%	31.0%	29.8%	29.2%	28.6%
UBPL	25.7%	36.1%	32.4%	31.2%	30.5%	29.9%
Youth (age 21)	4.7%	6.0%	5.4%	5.2%	5.0%	5.0%
Youth (age 24)	8.3%	10.6%	9.4%	8.9%	8.6%	8.5%

Table 44: Base Growth Scenario – Cost of BIG per Scenario compared to VAT Receipts (LBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	95.4%	129.0%	116.0%	111.0%	107.8%	105.7%
Unemployed	55.1%	81.4%	73.0%	70.3%	68.8%	67.6%
LBPL	56.3%	82.8%	74.3%	71.5%	70.0%	68.7%
UBPL	59.6%	86.7%	77.8%	74.8%	73.1%	71.8%
Youth (age 21)	10.8%	14.5%	12.9%	12.4%	12.1%	12.0%
Youth (age 24)	19.1%	25.4%	22.5%	21.4%	20.7%	20.4%

Table 45: Base Growth Scenario – Cost of BIG per Scenario compared to VAT Receipts (UBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	144.5%	194.7%	175.1%	167.6%	162.8%	159.6%
Unemployed	83.4%	122.8%	110.2%	106.1%	103.8%	102.0%
LBPL	85.3%	125.0%	112.1%	108.0%	105.6%	103.7%
UBPL	90.2%	130.8%	117.4%	112.9%	110.4%	108.4%
Youth (age 21)	16.4%	21.8%	19.5%	18.7%	18.3%	18.0%
Youth (age 24)	29.0%	38.3%	34.0%	32.2%	31.3%	30.7%

Table 46: Base Growth Scenario – Cost of BIG per Scenario compared to VAT Receipts (Phased-in Coverage)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Phased-in Coverage	0.0%	0.0%	0.0%	0.0%	23.8%	23.4%

If funded through VAT, a universal BIG at the level of the special COVID-19 Social Relief of Distress Grant would result in an approximate increase of 53.8% to expected VAT receipts in 2020/21 decreasing to 44.1% in 2024/25 as a result of higher tax revenues expected and a proportion of GDP. The increase in expected VAT receipts in 2020/21 under a universal BIG at the level of the LBPL and UBPL increases to 129.0% and 194.7% respectively.

2.5.3.2. High Road Scenario

The following tables set out the projected cost of implementing the BIG compared to VAT receipts (nominal) allowing for the various scenarios set out in Section 2.3 above, in relation to a BIG amount in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL, the UBPL and R 500 per month with respect to the Phased-in Coverage Scenario.

Table 47: High Road Scenario – Cost of BIG per Scenario compared to VAT Receipts (special COVID-19 Social Relief of Distress Grant)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	41.2%	53.8%	48.1%	43.0%	42.0%	40.9%
Unemployed	23.8%	33.9%	30.1%	26.1%	24.6%	23.2%
LBPL	24.3%	34.5%	30.0%	26.1%	24.6%	23.1%
UBPL	25.7%	36.1%	31.5%	27.5%	26.0%	24.6%
Youth (age 21)	4.7%	6.0%	5.4%	4.8%	4.7%	4.6%
Youth (age 24)	8.3%	10.6%	9.3%	8.3%	8.1%	7.9%

Table 48: High Road Scenario – Cost of BIG per Scenario compared to VAT Receipts (LBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	95.4%	129.0%	115.4%	103.3%	100.7%	98.3%
Unemployed	55.1%	81.4%	72.2%	62.7%	59.1%	55.8%
LBPL	56.3%	82.8%	72.1%	62.6%	59.0%	55.6%
UBPL	59.6%	86.7%	75.7%	66.0%	62.5%	59.1%
Youth (age 21)	10.8%	14.5%	12.9%	11.5%	11.3%	11.1%
Youth (age 24)	19.1%	25.4%	22.4%	19.9%	19.3%	18.9%

Table 49: High Road Scenario – Cost of BIG per Scenario compared to VAT Receipts (UBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	144.5%	194.7%	174.3%	155.9%	152.0%	148.3%
Unemployed	83.4%	122.8%	109.0%	94.6%	89.3%	84.2%
LBPL	85.3%	125.0%	108.8%	94.4%	89.1%	83.9%
UBPL	90.2%	130.8%	114.2%	99.6%	94.3%	89.2%
Youth (age 21)	16.4%	21.8%	19.4%	17.4%	17.1%	16.8%
Youth (age 24)	29.0%	38.3%	33.8%	30.0%	29.2%	28.6%

Table 50: High Road Scenario – Cost of BIG per Scenario compared to VAT Receipts (Phased-in Coverage)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Phased-in Coverage	0.0%	0.0%	0.0%	0.0%	19.5%	18.0%

If funded through VAT, a universal BIG at the level of the special COVID-19 Social Relief of Distress Grant would result in an approximate increase of 53.8% to expected VAT receipts in 2020/21 decreasing to 40.9% in 2024/25 as a result of higher tax revenues expected and a proportion of GDP. The increase in expected VAT receipts in 2020/21 under a universal BIG at the level of the LBPL and UBPL increases to 129.0% and 194.7%, respectively.

2.5.4. Funding of a Universal BIG through a Combination of PIT, CIT and VAT

A scenario illustrating the impact on PIT, CIT and VAT if all three tax sources of tax revenue bare the cost of a universal BIG in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL and the UBPL. The relative proportion of the cost of implementing a universal BIG that PIT, CIT and VAT should meet has been calculated in proportion to the relative importance of the particular type of tax-to-tax revenue over 2023/24 and 2024/25. The increase in PIT/CIT and VAT is therefore equally shared.

2.5.4.1. Base Growth Scenario

The following table sets out the projected cost of implementing the BIG compared to PIT/CIT/VAT receipts in relation to a BIG amount in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL and the UBPL.

Table 51: Base Growth Scenario – Cost of BIG per Scenario compared to PIT/CIT/VAT Receipts

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Special COVID-19Social Relief of Distress Grant	13.0%	17.0%	15.3%	14.6%	14.2%	13.9%
LBPL	30.2%	40.9%	36.7%	35.0%	34.1%	33.4%
UBPL	45.7%	61.7%	55.4%	52.9%	51.5%	50.5%

The following table sets out the increase in effective tax rates per income band for 2023/24 allowing for the projected cost of implementing the BIG allowing for the sharing of the cost of a universal BIG as described above.

Table 52: Base Growth Scenario – Increase in Effective Tax Rates per Income Band for 2023/24

Taxable Income Band R'000	Effective Tax Rate (2020/21)	Increase in Effective Tax Rate		
		Special COVID-19 Social Relief of Distress Grant	LBPL	UBPL
R0 - R80	0.0%	0.0%	0.0%	0.0%
R80 - R150	3.9%	0.6%	1.3%	2.0%
R150 - R250	9.7%	1.4%	3.3%	5.0%
R250 - R350	15.2%	2.2%	5.2%	7.8%
R350 - R500	17.5%	2.5%	6.0%	9.0%
R500 - R750	23.9%	3.4%	8.2%	12.3%

Taxable Income Band R'000	Effective Tax Rate (2020/21)	Increase in Effective Tax Rate		
		Special COVID-19 Social Relief of Distress Grant	LBPL	UBPL
R0 - R80	0.0%	0.0%	0.0%	0.0%
R80 - R150	3.9%	0.6%	1.3%	2.0%
R150 - R250	9.7%	1.4%	3.3%	5.0%
R750 - R1 000	29.1%	4.1%	9.9%	15.0%
R1 000 - R1 500	30.4%	4.3%	10.4%	15.6%
R1 500 +	42.7%	6.1%	14.6%	22.0%

2.5.4.2. High Road Scenario

The following table sets out the projected cost of implementing the BIG compared to PIT/CIT/VAT receipts in relation to a BIG amount in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL and the UBPL.

Table 53: High Road Scenario – Cost of BIG per Scenario compared to PIT/CIT/VAT Receipts

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Special COVID-19 Social Relief of Distress Grant	13.0%	17.0%	15.2%	13.6%	13.3%	12.9%
LBPL	30.2%	40.9%	36.5%	32.7%	31.8%	31.1%
UBPL	45.7%	61.7%	55.1%	49.3%	48.1%	46.9%

The following table sets out the increase in effective tax rates per income band for 2023/24 allowing for the projected cost of implementing the BIG allowing for the sharing of the cost of a universal BIG as described above.

Table 54: High Road Scenario – Increase in Effective Tax Rates per Income Band for 2023/24

Taxable Income Band R'000	Effective Tax Rate (2020/21)	Increase in Effective Tax Rate		
		Special COVID-19 Social Relief of Distress Grant	LBPL	UBPL
R0 - R80	0.0%	0.0%	0.0%	0.0%
R80 - R150	3.9%	0.5%	1.2%	1.9%
R150 - R250	9.7%	1.3%	3.1%	4.7%
R250 - R350	15.2%	2.0%	4.8%	7.3%
R350 - R500	17.5%	2.3%	5.6%	8.4%
R500 - R750	23.9%	3.2%	7.6%	11.5%
R750 - R1 000	29.1%	3.9%	9.3%	14.0%
R1 000 - R1 500	30.4%	4.0%	9.7%	14.6%
R1 500 +	42.7%	5.7%	13.6%	20.5%

2.6. Analysis of the Fiscal Feasibility of Implementing the Basic Income Grant in South Africa

2.6.1. Comparison of Cost in relation to Nominal GDP

2.6.1.1. Base Growth Scenario

The following tables set out the projected cost of implementing the BIG compared to nominal GDP allowing for the various scenarios set out in Section 2.3 above, in relation to a BIG amount in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL, the UBPL and R 500 per month in respect of the Phased-in Coverage Scenario.

Table 55: Base Growth Scenario – Cost of BIG per Scenario compared to GDP (special COVID-19 Social Relief of Distress Grant)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	2.8%	3.0%	2.9%	2.9%	2.9%	2.9%
Unemployed	1.6%	1.9%	1.8%	1.8%	1.8%	1.8%
LBPL	1.6%	1.9%	1.9%	1.9%	1.9%	1.9%
UBPL	1.7%	2.0%	1.9%	1.9%	2.0%	1.9%
Youth (age 21)	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Youth (age 24)	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%

Table 56: Base Growth Scenario – Cost of BIG per Scenario compared to GDP (LBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	6.4%	7.1%	6.9%	6.9%	6.9%	6.9%
Unemployed	3.7%	4.5%	4.4%	4.4%	4.4%	4.4%
LBPL	3.8%	4.6%	4.4%	4.5%	4.5%	4.5%
UBPL	4.0%	4.8%	4.7%	4.7%	4.7%	4.7%
Youth (age 21)	0.7%	0.8%	0.8%	0.8%	0.8%	0.8%
Youth (age 24)	1.3%	1.4%	1.3%	1.3%	1.3%	1.3%

Table 57: Base Growth Scenario – Cost of BIG per Scenario compared to GDP (UBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	9.7%	10.7%	10.5%	10.5%	10.5%	10.4%
Unemployed	5.6%	6.8%	6.6%	6.6%	6.7%	6.6%
LBPL	5.7%	6.9%	6.7%	6.7%	6.8%	6.8%
UBPL	6.1%	7.2%	7.0%	7.1%	7.1%	7.1%
Youth (age 21)	1.1%	1.2%	1.2%	1.2%	1.2%	1.2%
Youth (age 24)	1.9%	2.1%	2.0%	2.0%	2.0%	2.0%

Table 58: Base Growth Scenario – Cost of BIG per Scenario compared to GDP (Phased-in Coverage)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Unemployed	0.0%	0.0%	0.0%	0.0%	1.5%	1.5%

Under the Base Growth Scenario, the cost of universal BIG coverage at the level of the special COVID-19 Social Relief of Distress Grant ranges from 2.8% to 2.9% of nominal GDP over the projection period. This increases to 9.7% to 10.4% of nominal GDP over the projection period if a universal BIG is introduced at the UBPL level.

2.6.1.2. High Road Scenario

The following tables set out the projected cost of implementing the BIG compared to nominal GDP allowing for the various scenarios set out in Section **2.3** above, in relation to a BIG amount in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL, the UBPL and R500 per month with respect to the Phased-in Coverage Scenario.

Table 59: High Road Scenario – Cost of BIG per Scenario compared to GDP (special COVID-19 Social Relief of Distress Grant)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	2.8%	3.0%	2.9%	2.8%	2.8%	2.7%
Unemployed	1.6%	1.9%	1.8%	1.7%	1.6%	1.5%
LBPL	1.6%	1.9%	1.8%	1.7%	1.6%	1.5%
UBPL	1.7%	2.0%	1.9%	1.8%	1.7%	1.6%
Youth (age 21)	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Youth (age 24)	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%

Table 60: High Road Scenario – Cost of BIG per Scenario compared to GDP (LBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	6.4%	7.1%	7.0%	6.8%	6.7%	6.5%
Unemployed	3.7%	4.5%	4.4%	4.1%	3.9%	3.7%
LBPL	3.8%	4.6%	4.4%	4.1%	3.9%	3.7%
UBPL	4.0%	4.8%	4.6%	4.4%	4.1%	3.9%
Youth (age 21)	0.7%	0.8%	0.8%	0.8%	0.7%	0.7%
Youth (age 24)	1.3%	1.4%	1.4%	1.3%	1.3%	1.3%

Table 61: High Road Scenario – Cost of BIG per Scenario compared to GDP (UBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	9.7%	10.7%	10.6%	10.3%	10.0%	9.8%
Unemployed	5.6%	6.8%	6.6%	6.3%	5.9%	5.6%
LBPL	5.7%	6.9%	6.6%	6.2%	5.9%	5.5%
UBPL	6.1%	7.2%	6.9%	6.6%	6.2%	5.9%
Youth (age 21)	1.1%	1.2%	1.2%	1.1%	1.1%	1.1%
Youth (age 24)	1.9%	2.1%	2.1%	2.0%	1.9%	1.9%

Table 62: High Road Scenario – Cost of BIG per Scenario compared to GDP (Phased-in Coverage)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Unemployed	0.0%	0.0%	0.0%	0.0%	1.3%	1.2%

Under the High Road Scenario in respect of GDP growth from 2021/22, the cost of universal BIG coverage at the level of the special COVID-19 Social Relief of Distress Grant ranges from 2.8% to 2.7% of nominal GDP over the projection period. This increases to 9.7% to 9.8% of nominal GDP over the projection period if a universal BIG is introduced at the UBPL level.

Comparison of the cost of universal BIG coverage under the Base Growth Scenario and the High Road Scenario demonstrates the fiscal significance of the BIG and its resulting funding requirements can be reduced through higher economic growth. This is particularly significant under the unemployed, LBPL and UBPL coverage scenarios given that impact of higher economic growth on the employment rate and subsequent income distribution of the population aged 18 to 59.

2.6.2. Comparison of Cost in relation to Total Tax Revenue

2.6.2.1. Base Growth Scenario

The following tables set out the projected cost of implementing the BIG compared to total tax revenue (nominal) allowing for the various scenarios set out in Section **2.3** above, in relation to a BIG amount in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL, the UBPL and R500 per month with respect to the Phased-in Coverage Scenario.

Table 63: Base Growth Scenario – Cost of BIG per Scenario compared to Total Tax Revenue (special COVID-19 Social Relief of Distress Grant)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	10.9%	13.6%	12.2%	11.7%	11.5%	11.3%
Unemployed	6.3%	8.6%	7.7%	7.4%	7.3%	7.2%
LBPL	6.4%	8.7%	7.8%	7.5%	7.4%	7.3%
UBPL	6.8%	9.1%	8.2%	7.9%	7.8%	7.6%
Youth (age 21)	1.2%	1.5%	1.4%	1.3%	1.3%	1.3%
Youth (age 24)	2.2%	2.7%	2.4%	2.2%	2.2%	2.2%

Table 64: Base Growth Scenario – Cost of BIG per Scenario compared to Total Tax Revenue (LBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	25.2%	32.6%	29.3%	28.0%	27.5%	27.0%
Unemployed	14.5%	20.6%	18.4%	17.7%	17.6%	17.3%
LBPL	14.9%	21.0%	18.8%	18.0%	17.9%	17.6%
UBPL	15.7%	21.9%	19.6%	18.9%	18.7%	18.3%
Youth (age 21)	2.9%	3.7%	3.3%	3.1%	3.1%	3.1%
Youth (age 24)	5.0%	6.4%	5.7%	5.4%	5.3%	5.2%

Table 65: Base Growth Scenario – Cost of BIG per Scenario compared to Total Tax Revenue (UBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	38.1%	49.3%	44.2%	42.2%	41.6%	40.8%
Unemployed	22.0%	31.1%	27.8%	26.7%	26.5%	26.0%
LBPL	22.5%	31.6%	28.3%	27.2%	27.0%	26.5%
UBPL	23.8%	33.1%	29.6%	28.5%	28.2%	27.7%
Youth (age 21)	4.3%	5.5%	4.9%	4.7%	4.7%	4.6%
Youth (age 24)	7.6%	9.7%	8.6%	8.1%	8.0%	7.8%

Table 66: Base Growth Scenario – Cost of BIG per Scenario compared to Total Tax Revenue (Phased-in Coverage)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Unemployed	0.0%	0.0%	0.0%	0.0%	6.1%	6.0%

Under the Base Growth Scenario in respect of GDP growth from 2021/22, the cost of universal BIG coverage at the level of the special COVID-19 Social Relief of Distress Grant ranges from 10.9% to 11.3% of nominal tax revenue over the projection period. This increases to 38.1% to 40.8% of nominal tax revenue over the projection period if a universal BIG is introduced at the UBPL level.

2.6.2.2. High Road Scenario

The following tables set out the projected cost of implementing the BIG compared to total tax revenue (nominal) allowing for the various scenarios set out in Section **2.3** above, in relation to a BIG amount in line with the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL, the UBPL and R500 per month with respect to the Phased-in Coverage Scenario.

Table 67: High Road Scenario – Cost of BIG per Scenario compared to Total Tax Revenue (special COVID-19 Social Relief of Distress Grant)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	10.9%	13.6%	12.3%	11.0%	10.7%	10.5%
Unemployed	6.3%	8.6%	7.7%	6.7%	6.3%	5.9%
LBPL	6.4%	8.7%	7.7%	6.7%	6.3%	5.9%
UBPL	6.8%	9.1%	8.1%	7.0%	6.7%	6.3%
Youth (age 21)	1.2%	1.5%	1.4%	1.2%	1.2%	1.2%
Youth (age 24)	2.2%	2.7%	2.4%	2.1%	2.1%	2.0%

Table 68: High Road Scenario – Cost of BIG per Scenario compared to Total Tax Revenue (LBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	25.2%	32.6%	29.5%	26.4%	25.7%	25.1%
Unemployed	14.5%	20.6%	18.4%	16.0%	15.1%	14.2%
LBPL	14.9%	21.0%	18.4%	16.0%	15.1%	14.2%
UBPL	15.7%	21.9%	19.3%	16.8%	16.0%	15.1%
Youth (age 21)	2.9%	3.7%	3.3%	2.9%	2.9%	2.8%
Youth (age 24)	5.0%	6.4%	5.7%	5.1%	4.9%	4.8%

Table 69: High Road Scenario – Cost of BIG per Scenario compared to Total Tax Revenue (UBPL)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Universal	38.1%	49.3%	44.5%	39.8%	38.8%	37.9%
Unemployed	22.0%	31.1%	27.8%	24.2%	22.8%	21.5%
LBPL	22.5%	31.6%	27.8%	24.1%	22.8%	21.4%
UBPL	23.8%	33.1%	29.2%	25.4%	24.1%	22.8%
Youth (age 21)	4.3%	5.5%	5.0%	4.4%	4.4%	4.3%
Youth (age 24)	7.6%	9.7%	8.6%	7.7%	7.5%	7.3%

Table 70: High Road Scenario – Cost of BIG per Scenario compared to Total Tax Revenue (Phased-in Coverage)

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Unemployed	0.0%	0.0%	0.0%	0.0%	5.0%	4.6%

Under the High Road Scenario in respect of GDP growth from 2021/22, the cost of universal BIG coverage at the level of the special COVID-19 Social Relief of Distress Grant ranges from 10.9% to 10.5% of nominal tax revenue over the projection period. This increases to 38.1% to 37.9% of nominal tax revenue over the projection period if a universal BIG is introduced at the UBPL level.

Similarly, the results demonstrate that the fiscal significance of the BIG and its resulting funding requirements can be reduced through higher economic growth. The corresponding ratios to total tax revenue are 10.9% to 10.5% of total tax revenue for universal BIG coverage at the level of the special COVID-19 Social Relief of Distress Grant and 38.1% to 37.9% of total tax revenue for universal BIG coverage at the UBPL.

2.7. Analysis of the Impact on Income Distribution resulting from Implementation of the Basic Income Grant in South Africa

Implementation of the BIG will alter income distribution. The following graphs set out the impact of universal coverage of a BIG at the level of the special COVID-19 Social Relief of Distress Grant of R350 per month, the LBPL and the UBPL per gender compared to the income prior to the introduction of a universal BIG.

Figure 1: Universal Coverage – Impact on Income Distribution (Female)

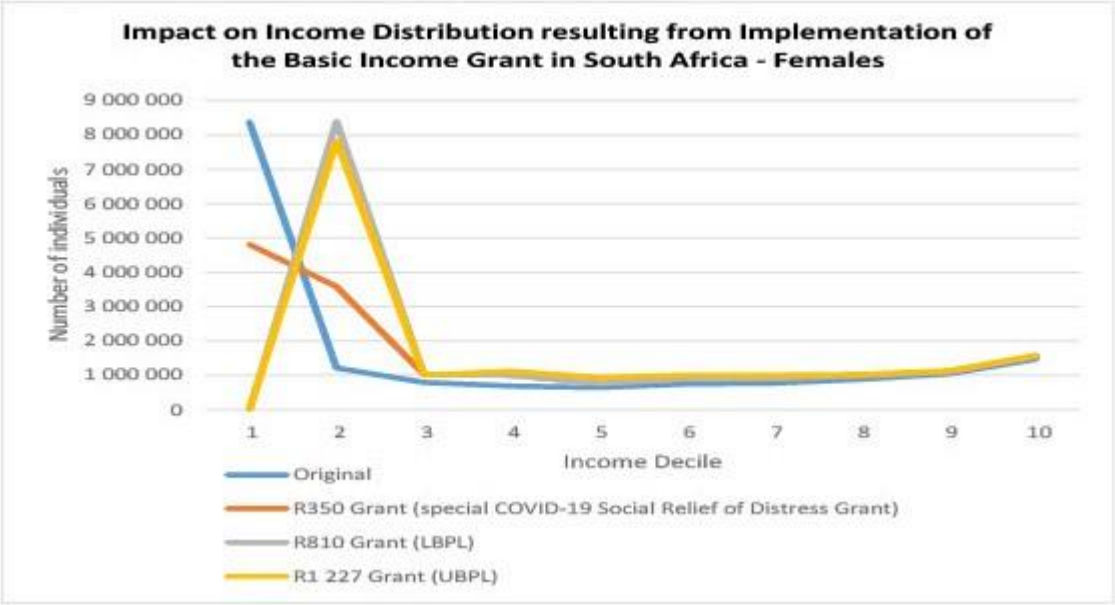


Figure 2: Universal Coverage – Impact on Income Distribution (Male)

The impact of implementing the BIG has a significant impact on income distribution, particularly at the lower income levels, where a significant proportion of the population are concentrated given South Africa's unemployment, poverty and inequality challenges. The impact on income distribution is dependent on the level of the BIG, with a BIG at the UBPL having the most significant impact. The BIG at the LBPL and the UBPL pushes all individuals in income decile 1 (determined before the introduction of a universal BIG), representing 57% of individuals aged 18 to 59 or 19.1 million individuals to income decile 2 (determined before the introduction of a universal BIG) and income decile 3 (determined before the introduction of a universal BIG). It is noted that while individuals aged 18 to 50 have been pushed to higher income deciles allowing for introduction of the BIG at the LBPL and the UBPL, the actual income levels within the income deciles will change.

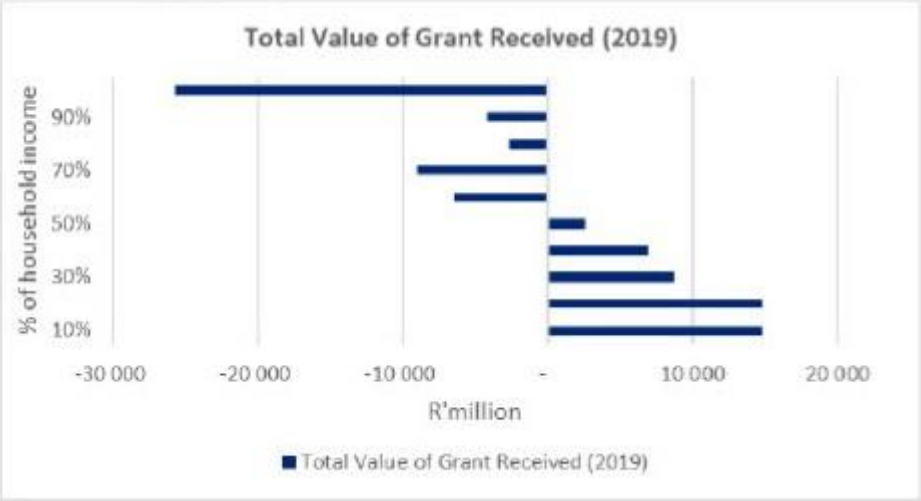
The provision of a BIG at LBPL and UBPL is in line with one of the NDP's goals which is to reduce the proportion of persons living below the LBPL to zero by 2030.

The impact on females is higher given the higher unemployment rate in relation to females and the consequently higher proportion of females falling under the LBPL and UBPL. As per the StatsSA Quarterly Labour Force Survey for Quarter 1, 2020, the unemployment rate was 32.4% for females and 28.3% for males. The unemployment rate for females has been consistently higher than the unemployment rate for males by an average of 3% to 4%.

2.8. Analysis of the Redistribution and Economic Impact of Implementing the Basic Income Grant in South Africa

In line with the methodology outlined in Section 2.2.1, the net impact of the universal BIG (special COVID-19 Social Relief of Distress Grant) is calculated across income deciles by allowing for the value of the BIG less PIT receipts to fund the BIG. As can be seen in the graph below, the net "negative" grant contribution illustrates that the value of the BIG is less than the increase tax paid by the higher income deciles. The graph illustrates that from the 6th income decile, the net grant amount is negative.

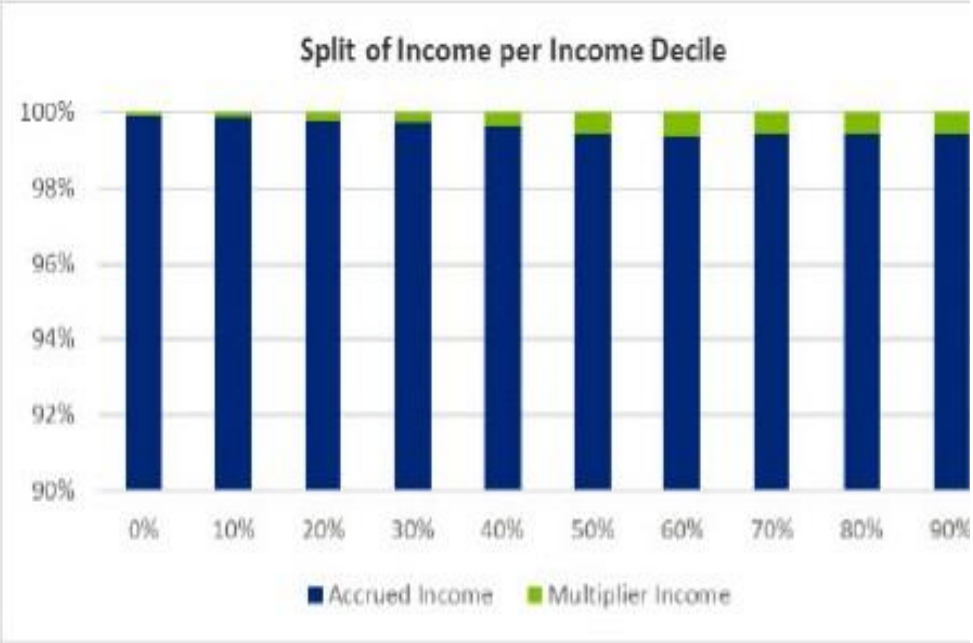
Figure 3: Net Aggregate Impact of BIG Across Households



Such a redistribution of income will have positive economic impacts if the net impact of the distribution mechanism is positive, that is, the impact of the rise in income for poorer households is greater than the impact of the decrease in income for wealthier households.

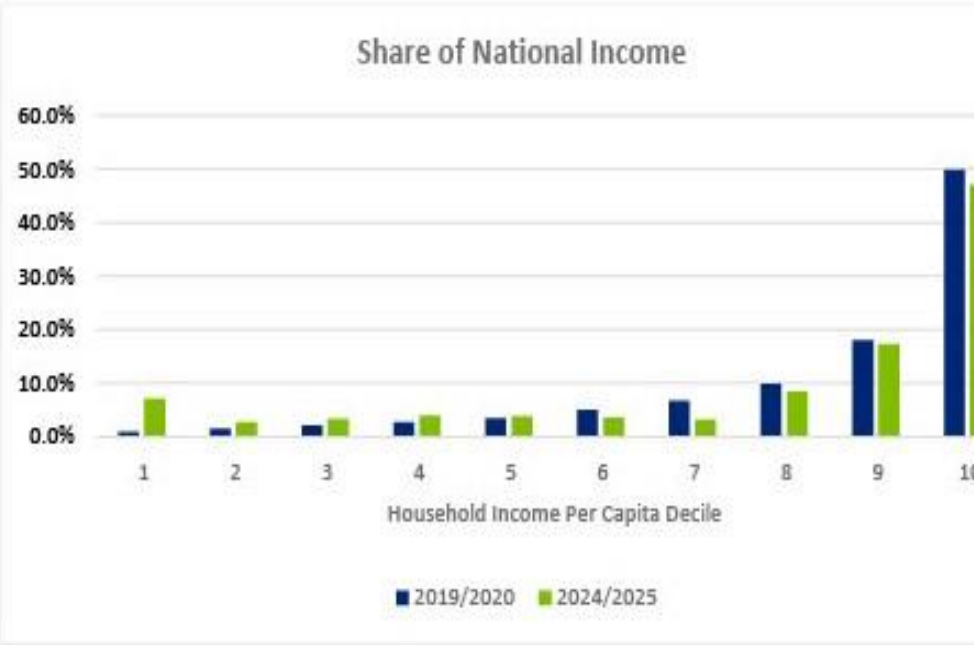
The additional income per household decile through a universal BIG results in an additional knock-on effect that is generated through consumption activities in the economy. This is as consumption spurs demand for goods and services, which produces additional income in the form of wages earned. The additional income generated through the multiplier effect is illustrated below. By 2024/25, additional income accounts for an aggregate of 7% in household income as a result of the knock-on effect of the BIG. By 2024/25, additional wealth accounts for an aggregate of 7% in household income as a result of the knock-on of the BIG to households through the indirect stimulation of other sources of household income. As seen below, higher income households typically earn higher percentages of the multiplier income, as higher income households earn income from more diverse sources within the economy that receive stimulation through the BIG.

Figure 4: Split of Income per Income Decile resulting from the BIG through Multiplier Effect



From a redistributive perspective, the lowest 50% of households become relatively richer as a result of the BIG, while the top 50% become relatively poorer as set out in the graph below. The share of income held by the poorest 50% of households rises significantly between 2019/20 (baseline) and 2024/2025, at the expense of the richest 50%.

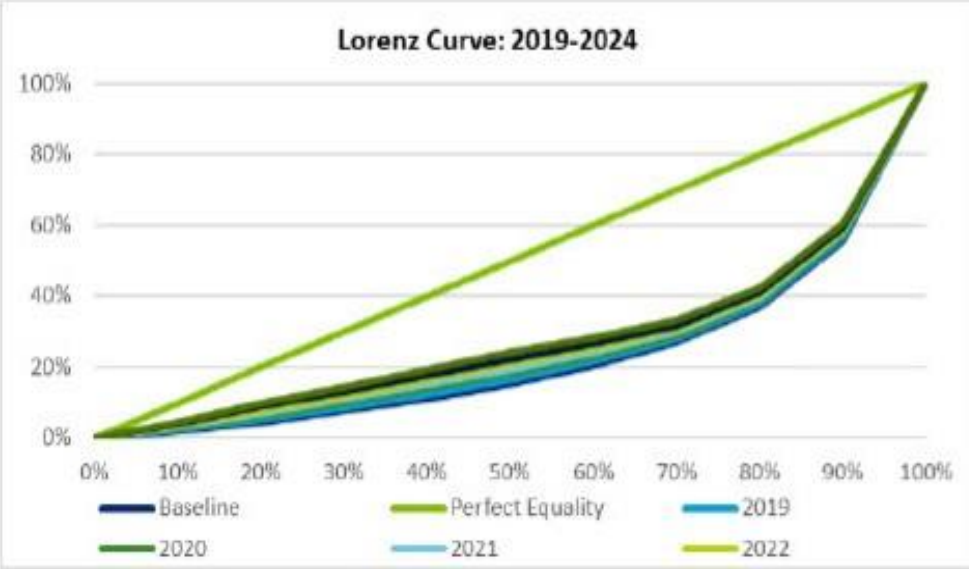
Figure 5: Change in % Share of Income per Income Decile



The above chart shows the percentage share of national income per household income per capita decile, as reported through the national accounts. The introduction of the BIG reduces the share of household income per capita as a percentage of the total in the highest income decile from 49.9% in 2019/2020 on an income per capita basis to just below 47.1% by 2024/2025. The share of household income per capita as a percentage of the total in the lowest income decile increases from 0.8% in 2019/2020 on an income per capita basis to 7.0% by 2024/2025. The corresponding income per capita gini co-efficient decreases from 0.61 to 0.49, representing a 20% decrease.

This corresponds to a shift in inequality measurements. The graph below illustrates the Lorenz curve for South Africa. The curve shows the distribution of income through the cumulative share of income. This shows that in South Africa, 90% of households own around 56% of total income, and therefore the richest 10% of households own around 45% of all income. The introduction of the BIG has the effect of reducing inequality. With each subsequent year over the projection period, the curve moves closer to 45 degrees (which represents perfect income equality), illustrating a reduction in inequality. By 2024/25, the concentration of income of the top 10% has fallen to below 40%.

Figure 6: Lorenz Curve – Redistributive Impact of the BIG



The results show that the introduction of the BIG should have redistributive effects and positive economic gains that increase the wealth levels of the poorest households.

The COVID-19 pandemic has brought about significant hardships to almost all sectors of the economy. The double knock of aggregate demand and aggregate supply shocks that were driven by a combination of the locking down of economies globally, disruption supply chains and cessation of economic activity in many sectors, for which the resulting loss of income severely depressed demand. As of September 2020, the GDP figures for the second quarter of 2020 demonstrated a contraction of a nearly 51% over the first quarter (on a seasonally-adjusted, annualised basis).

The implementation of a BIG has the ability to offset the pain caused by the sharp economic contraction. Income support allows for consumption to be sustained, with household consumption then in turn having positive knock-on effects throughout the economy. Based on analysis of the multiplier effects of the BIG, the grant has the potential to positively contribute around 0.5% to GDP growth over the forecast period through improved household demand as well increase the employment rate. The table below sets out the estimated impact on GDP growth and employment arising from the multiplier effects of the BIG.

Table 71: Universal BIG – Estimated impact on GDP and Employment Scenario (Base Growth

	2020/21	2021/22	2022/23	2023/24	2024/25
GDP Growth	-7.20%	2.60%	1.50%	1.50%	2.10%
GDP Growth allowing for implementation of BIG	-6.70%	3.10%	2.00%	2.00%	2.70%
Increase in employment	1.6%	2.1%	2.7%	3.4%	4.0%

It is noted that this analysis above is based on the outputs of the SAM multiplier model, calibrated with data for 2015 and hence represents the structural economic interactions in this year. The output may therefore not necessarily be representative in the redistributive and economic impacts post COVID-19 given the uncertain economic outcomes. The results should thus be considered as a representation of the potential outputs based on the structural interactions and linkages present in the economy, and not the anticipated behavioural impacts that may occur.

3. CONCLUSION

From a fiscal perspective, the costs of implementing a BIG are significant, particularly in relation to providing universal coverage and considering higher levels of a BIG. Under the Base Growth Scenario, which is represents National Treasury forecasts over the projection period, the cost of universal BIG coverage at the level of the special COVID-19 Social Relief of Distress Grant ranges from 2.8% to 2.9% of nominal GDP over the projection period. This increases to 9.7% to 10.4% of nominal GDP over the projection period if a universal BIG is introduced at the UBPL level. The corresponding ratios to total tax revenue are 10.9% to 11.4% of total tax revenue for universal BIG coverage at the level of the special COVID-19 Social Relief of Distress Grant and 38.1% to 40.8% of total tax revenue for universal BIG coverage at the UBPL.

Allowing for a High Road Scenario with respect to GDP growth from 2021/22, the cost of universal BIG coverage at the level of the special COVID-19 Social Relief of Distress Grant ranges from 2.8% to 2.7% of nominal GDP over the projection period. This increases to 9.7% to 9.8% of nominal GDP over the projection period if a universal BIG is introduced at the UBPL level. The corresponding ratios to total tax revenue are 10.9% to 10.5% of total tax revenue for universal BIG coverage at the level of the special COVID-19 Social Relief of Distress Grant and 38.1% to 37.9% of total tax revenue for universal BIG coverage at the UBPL.

Comparison of the cost of universal BIG coverage under the Base Growth Scenario and the High Road Scenario demonstrates the fiscal significance of the BIG, although the resulting funding requirements can be reduced through higher economic growth.

Despite, the fiscal significance of implementing the BIG, the BIG should be viewed as a means to restructuring income in South Africa which suffers from the triple challenges of poverty, unemployment and inequality.

It is widely recognised that social assistance, particularly through the OAG and CSG, has contributed significantly towards the reduction of poverty levels in South Africa. Implementing a BIG has the potential to make significant inroads into improved income equality in South Africa and possible economic gains through the multiplier effect. Based on author analysis, the implementation of a universal BIG at the level of the current special COVID-19 Social Relief of Distress Grant has the potential to reduce the concentration of income of the top 10% to 49.9% in 2019/2020 on an income per capita basis to just below 47.1% by 2024/2025. The share of household income per capita as a percentage of the total in the lowest income decile is projected to increase from 0.8% in 2019/2020 on an income per capita basis to 7.0% by 2024/2025. The corresponding income per capita gini co-efficient decreases from 0.61 to 0.49, representing a 20% decrease.

A BIG could impact macro-level economic growth directly, through increasing household productivity and employment, stimulating aggregate demand, affecting labour force participation, and influencing savings and taxation. Based on analysis of the multiplier effects of the BIG at the level of the current special COVID-19 Social Relief of Distress Grant, the grant has the potential to positively contribute around 0.5% to GDP growth over the forecast period through improved household demand as well increase employment by 4.0% by the end of the projection period.

Further, basic income assistance supports investment into human capital development, for example: improved nutrition, health care, housing and transportation. The importance of human capital, in particular with respect to health education, in social and economic development is widely accepted. There is a strong correlation between GDP per capita and education levels and life expectancy as a proxy for the level of health in a population.

If funded through PIT, a universal BIG at the level of the special COVID-19 Social Relief of Distress Grant would result in an approximate average increase in effective tax rates of 8.2% across taxable income bands considered for 2023/24. A universal BIG at the LBPL would result in an approximate average increase in effective tax rates of 19.8% across taxable income bands considered for 2023/24. A universal BIG at the UBPL would result in an approximate average increase in effective tax rates of 30.0% across taxable income bands considered for 2020/21. Similar results arise under the High Road Scenario.

The projected clawback of the cost of implementing the BIG through PIT under the universal scenario represents approximately 5% of the cost of a universal BIG (at all levels of BIG considered). This relatively small clawback is a result of the large number of recipients that fall in the lowest taxable income band (including those that who do not earn any taxable income) and hence are not subject to PIT, reinforcing South Africa's relatively small tax base. This small tax base is a symptom of South Africa's high and persistent inequality. Inequality in South Africa, as measured by the consumption Gini coefficient, was 0.61 in 1996, increasing to 0.63 in 2014[43]. This is despite the efforts to reduce inequality that the government has made since 1994.

The Inequality Trends Report by StatsSA found that labour market activity largely influenced the level of inequality within the economy, stating that about 67% of total inequality was driven by inequality in earnings. Income from the labour market had accounted for the largest proportion of income inequality at about 77.2% in 2006, decreasing to 74.2% in 2015. Wage distributions of South African income earners was found to have a "long upper tail" – highlighting that the bulk of the population was comprised of low-income earners, while the top decile of income earners held a substantial majority of the national income.

In the 2020 Budget Statement, Government announced tax relief on personal income to the value of R2 billion for the 2020/21 tax year in the hope that this will boost not only economic activity, but also increase tax revenue income. Furthermore, government signalled intent in the 2020 budget to cut corporate income tax in future budgets. Tax revenue has continuously deviated to the downside from its expected level, which strongly suggests that South African consumers are close to or at the maximum referred to in the Laffer curve theory of tax revenue, though no modelling with regards to the Laffer curve in respect of South Africa.[44]

While there have been warnings regarding raising taxes to reduce South Africa's budget deficit, it is important to note the difference between raising taxes to fund a BIG and raising taxes to fund a budget deficit. There are strong moral arguments given South Africa's history and high-income inequality for expanding PIT to fund a BIG, be it partially or fully. Economic arguments for expanding PIT on high-income earners, particularly in relation to the current economic crisis, include the provision of funding for the necessary state expenditure on low-income households.

It is noted that the economic effect of COVID-19 will include reduced revenue collection. PIT, CIT and VAT collections are expected to fall substantially over 2020/21. Given the economic impact of COVID-19, the capacity to raise PIT, CIT and VAT tax rates is limited. National Treasury has signalled the possibility of an inheritance tax and a "solidarity tax", which is regarded as a wealth tax, in a bid to raise additional finances for the fiscus.[45] The DAC investigated the feasibility of a wealth tax. It was concluded that with the highly unequal levels of wealth in South Africa, a taxation system that ignores such inequalities in wealth, lacks legitimacy in the tax system.[46] It further concluded, however, that the introduction of a wealth tax cannot be implemented in the short-term. The DAC recommended that the decision regarding a wealth tax could not be made until the following actions were undertaken:

1. Determination of an appropriate tax base, that is, which forms of wealth to include within the scope of a wealth tax;
2. Provision of comprehensive data on the pattern of wealth ownership in South Africa; and

[43] https://data.worldbank.org/indicator/SI.POV.GINI?locations=ZA&most_recent_year_desc=true
[44] https://static.pmg.org.za/170301wCsubmission.pdf
[45] https://www.taxcom.org.za/docs/20180329%20Final%20DTC%20Wealth%20Tax%20Report%20-%20To%20Minister.pdf
[46] https://businesstech.co.za/news/finance/411919/the-taxes-which-are-likely-to-increase-in-south-africa-and-those-that-wont/

3. Undertaking a cost-benefit analysis as to whether the tax revenue generated would exceed the administrative and economic burden on taxpayers and SARS.

Given the significance of the cost of a universal BIG, alternative sources of taxation such as those mentioned above, should be assessed for viability in financing (partially or wholly) the implementation of a BIG. However, such alternative sources of taxation may only be practically implemented over the medium term, therefore PIT, CIT and VAT remain the alternatives over the short-term if implementation of a BIG takes place within the short-term.

In line with the recommendation of the DAC in relation to financing NHI, the implementation of a universal BIG lends itself to a financing base that is as broad as possible, in the interests of social solidarity. The cumulative effect of the combination of tax instruments should be progressive. The importance of social solidarity is in line with ILO recommendation No. 202, which refers specifically to the principle of solidarity of financing.

Implementing a targeted BIG will reduce the resulting cost and hence consequent funding requirements that will likely need to be met through taxation. Various scenarios are considered in this respect. However, targeting is associated with the administration burden and cost created by applying this targeting in practice. It is noted that certain of the scenarios presented may not be practical to implement in relation to targeting and therefore should be considered for illustrative purposes only.

Alternatively, the cost of implementing the BIG can be funded through the reallocation of public expenditure. However, reallocating public expenditure comes with trade-offs. Spending of health, education and social development currently accounts for 56% of government expenditure, as per the 2020 Budget Statement. Furthermore, the implementation of NHI is a policy priority, which will result in additional demands on the fiscus. Ultimately, the introduction of a BIG will require trade-offs with other development programmes, including other social security reforms and tertiary education.

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Annexure 4: Theoretical Aspects Regarding Basic Income

1. Nature of a Basic Income Grant

The nature of a Basic Income Grant is defined by whether the support is universal or targeted and whether the support is conditional or unconditional. Gentillini *et al*. (2020) provide three metrics with which to analyse the structure and characteristics of a grant, namely targeting, conditionality and transfer modality. Grant targeting refers to the population that is targeted to receive the grant. This is largely needs-based, whereby a conditional cash transfers or public works programme will fit the goals of infrastructure development, or the provision of employment. The second dimension is conditionality, which refers to behavioural changes that the introduction of a grant is intended to bring about with regard to recipients. An unconditional grant is the purest form of the conditionality measure, which attaches no rules or contingencies to the pay-out of the grant. The transfer modality metric refers to the form in which basic income is provided, for example: cash; a voucher system; or in-kind payments. It is noted that for purposes of this analysis, outcomes have not been categorised as per transfer modality.

1.1. Universal versus Targeted

A universal basic income grant is a basic income grant that is available to all, i.e. there are no eligibility requirements in relation to receiving the support. The arguments for making the basic income grant universal:

- Universality avoids exclusion and inclusion errors that are inherent in needs-based targeting besides perhaps citizenship or established residency and age.
- Universality may eliminate any stigma affecting beneficiaries.
- Transaction costs incurred by beneficiaries with accessing benefits such as time spent in applying for assistance are reduced or removed.
- Administration of such assistance is simpler, resulting in lower per beneficiary costs.
- A stable source of income over time results in a number of economic and psychological benefits.
- A universal transfer removes the price effect of transfers on the labour market such as the reduction in labour supply to avoid a reduction in the level of social assistance.
- Universality may strengthen the programme's political sustainability as beneficiaries cover the full income distribution.

In line with the argument for universality, the arguments against targeted basic income include the low coverage rate associated with such schemes, the impact on the labour market, the welfare trap[47] and the administration burden and cost created by applying targeting. Furthermore, such schemes are more vulnerable to abuse and corruption.

Means-tested basic income is a form of targeting whereby beneficiaries are only eligible for benefits if their income and assets are below a certain pre-determined level. Besides means testing, there are a number of other methodologies that can target eligible individuals in relation to basic income, namely:

- **Proxy means testing**: Demographic characteristics are used as a proxy for income and assets to determine eligibility.
- **Community-based targeting**: Community leaders identify beneficiaries in need of basic income.
- **Geographical targeting**: Individuals residing in certain geographical regions are eligible for basic income.
- **Demographic targeting**: Demographic characteristics such as age and whether individual is from a previously disadvantaged background are used for targeting purposes.
- **Self-targeting**: No eligibility criteria are set but the resulting level of basic income is low resulting in those who do not need this basic income, not taking up the basic income.

The main drawback of universal basic income is that the costs of such assistance may be significantly larger given the increased number of recipients.

[47] The welfare trap asserts that means-tested social assistance systems can encourage individuals to remain on social assistance because the withdrawal of means-tested benefits that comes with entering low-paid work results in no significant increase to total income. An individual views the opportunity cost of returning to work is too high for little or no financial return. This can create a perverse incentive to not work.

1.2. Conditional versus Unconditional

Recipients of conditional basic income grants only receive assistance if they can demonstrate that their behaviour meets certain stated requirements. Conversely, unconditional basic income grants do not depend on individual behaviour.

The first argument for providing conditional basic income support is that the provider of the assistance is of the opinion that the state knows how the money should be spent – while the beneficiary is not expected to spend the money necessarily the same way. This information asymmetry, which occurs when one party to an economic transaction possesses greater material knowledge than the other party, may exist as a result of adverse selection. The state possesses information on desired outcomes, while beneficiaries make decisions with incomplete knowledge of relevant facts affecting their livelihood. Even where beneficiaries are informed, they may display irrational behaviour based on factors such as desire of leisure over work, and socio-economic characteristics such as community relative living standards. Asymmetric information may hinder the achievement of the objectives of social assistance.

Furthermore, even if beneficiaries act in their own and in their dependents' interest in a fully rational way, they may not take into account the interests of other people and their dependents. That is, they may exert negative externalities on them. Negative externalities refer to the cost that is suffered by a third party as a consequence of an economic transaction.

Therefore, to meet the objectives of basic income assistance, which is often broadly defined as economic development and social transformation, conditions are attached to basic income in order to aid beneficiaries to escape long-term poverty. These conditions are largely linked to promoting investment into human capital development, for example, school attendance and regular clinic visits. The importance of human capital, particular with respect of health and education, in economic and social development is widely accepted. There is a strong correlation between GDP per capita and education levels and life expectancy as a proxy for the level of health in a population.

The advantages of conditional social assistance include the cost savings of these schemes as those who do not comply do not receive assistance. Furthermore, conditional schemes may meet their aim of promoting investment into human capital faster than unconditional social assistance.

The disadvantage of using conditional basic income grants comes with the administrative complexity of monitoring the recipients of the grant to ensure that they comply with the conditions attached to the basic income grant. This raises the per-beneficiary cost of providing basic income assistance.

2. Value of Basic Income

2.1. Level of Basic income

The level of basic income is critical to the objective of such schemes, which are often to provide income security, a decent standard of living, to reduce inequality poverty or provide a decent standard of living. In order to reduce inequality and poverty it needs to be set at a level sufficient to meet at least people's basic needs. Proposals often suggest a level of basic income equivalent to the national poverty line, a percentage of median disposable income or average income of lower income. It is further noted that the adequacy of basic income depends not only on its level, but also on the ability to deliver on the various components identified as making up a social protection floor. A social protection floor is a basic set of social rights such as education, healthcare housing, water and sanitation.

To ensure adequate support over time, adjustments are needed to allow for changes in purchasing power. Further adjustment could be made to increase overall standards of living. Adjustments should therefore be linked to inflation to maintain purchasing power or wages to maintain an overall standard of living, or a combination of both.

2.2. Flat Rate or Variable Rate Basic Income

Basic income assistance can be provided as a flat rate to all, that is, the same level of assistance is provided to all beneficiaries. Variable rate assistance can be provided where the level of support depends on certain criteria, for example: the level of income; number of dependents; or unemployment.

Classic proposals argue equal support to all while arguments concerning equality-related outcomes acknowledge that the most disadvantaged would be further behind and would therefore need more, not equal, support to ensure a certain standard of living.

Therefore, with respect to children and older persons, assumptions with regard to benefit levels are important. This has major implications for the capacity of flat rate basic income grants to cover the needs of the population. Further, flat rate basic income grants cannot adequately respond to special needs and circumstances, such as higher needs due to health conditions or disabilities. Therefore, separate schemes aimed at compensating for special needs are often provided in practice.

A flat rate amount is simple and easier to administer, therefore will cost less to administer compared to variable support. Examples of countries and states who provide a universal BIG are Iran, Alaska and Mongolia. Variable support will increase administrative costs as households will need to be vetted to ensure that they comply with the eligibility criteria. However, variable basic income support will help increase the intended impact on alleviating poverty in each household as those households further away from the determined poverty line would be given more than those who are closer to the determined poverty line.

3. Delivery Mechanisms

Delivery mechanisms for basic income grants can be classified based on whether they are channelled through the benefit or tax system, and whether they are based on employment or not.

3.1. Benefit-Based Programs Not Based on Employment

This delivery mechanism provides basic income assistance to beneficiaries who may be targeted. Further, the basic income grant may be conditional or unconditional. This delivery mechanism has advantages of simplicity and transparency, including it being easily communicated to, and understood by, the public.

3.2. Tax-Based Programs Not Based on Employment

This delivery mechanism is known as Negative Tax Income (“NTI) which targets basic income assistance through tax exemption below a certain income level. Those that earn more than this level will be taxed on the proportion of their income that exceeds that level. Those who earn less than that level will receive subsidies proportional to the amount that is in deficit of that income amount.

This mechanism therefore reduces basic income assistance as income rises-and hence allows directly for means testing indirectly through progressive income taxation. The progressivity of the basic income grant is seen as higher income households become net contributors to the grant pool through taxation, while lower income household are net receivers through subsidies proportional to the amount that their income is in deficit to the minimum income level. Increasing the size of the grant would require a greater tax pool, and the distance between net contributors. It is therefore essential that the minimum income level, the effective marginal tax rate on benefits, and the break-even point where members of society become a net contributor to government funds needs to be appropriately assessed. Further, the information demands resulting from this mechanism are high as it relies on actual income of individuals.

The main limitation of this delivery mechanism is that it only reaches taxpayers, who tend to be formally employed. This would largely leave out informal workers, the self-employed and those not filing taxes, which would represent a large proportion of the poor population in developing countries. This delivery mechanism requires credible and efficient tax administration, tax tribunals and a functioning dispute resolution system.

3.3. Benefit-Based Programs Based on Employment

Wage subsidies are a benefit-based programme based on an employment delivery mechanism. Wage subsidies are direct transfers to employers or firms or individual workers to cover wages in full or in part. Wage subsidies present a range of possible benefits, including:

- Obtaining work experience and acquiring skills will lead to increased productivity and subsequent improvement in employment prospects over the longer term. This is particularly relevant for first-time job seekers or those who have gone through long-periods of unemployment or inactivity.

- Wage subsidies reduce labour costs hence increasing the demand of labour by employers or the supply of labour by individuals.
- Awareness of eligibility might change the eligible workers' market perception of success rates and increase job-search efforts, which may also increase employment probability.
- Wage subsidies may improve equity between high-skilled and low-skilled workers over the longer term.

3.4. Tax-Based Programs Based on Employment

This delivery mechanism is known as the Earned Income Tax Credit ("EITC") whereby the level of basic income assistance provided is inversely proportional to a person's income.

The main advantages of an EITC is that it is politically attractive as it rewards employment and working through the tax authority makes it easier to administer.

The main limitation of this delivery mechanism is that it only reaches taxpayers, who tend to be formal wage earners. This would largely leave out informal workers, the self-employed and those not filing taxes, which would represent a large proportion of the poor population in developing countries. This delivery mechanism requires credible and efficient tax administration, tax tribunals and a functioning dispute resolution system.

3.5. Funding of Basic Income Grants

There are a number of options for funding basic income grants. One of the main methods for achieving this goal is through fiscal methods. This can be done in three ways:

The first is to re-allocate public expenditure (tax expenditure), by shifting allocations of public expenditure away from high-cost, low-impact investments, and towards high-impact social investments, such as a grants system. Re-allocating public expenditure comes with a basket of trade-offs. For example, spending on the introduction of basic income assistance may come at the expense of other social programmes such as the introduction of National Health Insurance, or the option of expanding current spending on social security programmes, such as childcare or housing. Otherwise, inefficient spending can be identified and reduced.

The second fiscal method is through increasing tax revenue. This can be achieved through a combination of increasing the rate for direct and indirect taxes or strengthening the efficiency of tax collection methods and overall compliance.

A third method of funding is through incomes derived from commodity revenues. Countries high in resource endowments such as oil or mining commodities can use the windfalls during price booms to fund social development programmes for their respective populations.

Unconventional methods for funding basic income assistance can also be found in accessing international donor funding; eliminating illicit financial flows; tapping into fiscal and foreign exchange reserves such as a sovereign wealth fund; or restructuring debt in the case of countries stuck in a debt trap. It must be noted that options that use foreign exchange reserves or international donor funding may result in an unsustainable system if the country or global economy were to enter a recession. Here, the levels of funding will drop despite an increase in the number of needy beneficiaries.

4. Links to the Labour Market

Basic income assistance may positively affect both the supply and demand sides of the labour market.

4.1. Labour Supply

Arguments based on economic theory state that basic income grants to the unemployed tends to undermine their willingness to supply labour to the market, as additional income reduces the "opportunity cost" of not working. Utility theory suggests that workers will allocate their time between work and leisure. At low levels of income, the marginal utility from giving up a unit of leisure is greater than the marginal utility of working, and as such, households choose to remain unemployed. This is particularly the case where means testing applies, whereby there may be a disincentive to increasing the supply of labour if labour earnings reduce the level of basic income assistance.

However, it is also argued that basic income assistance will help with seeking employment and training hence the converse may be the case.

4.2. Labour Demand

Basic income grants support the accumulation of human capital by a worker and it further supports productivity-bolstering consumption. Households see a rise in income, which allows them to increase consumption of domestically-produced goods. This, in turn, increases demand for labour to produce these goods, which has positive impacts on employment and wages. From a socio-economic impact perspective, increased income allows households to afford improved nutrition, health care, housing and transportation, which all supports increased productivity. In effect, basic income assistance can be seen as a wage subsidy. There are two elements to this, first is that demand for intermediate and final goods is stimulated as a result. The second is that workers receive a relatively higher wage for the same level of employment. Providing higher wages than the norm incentivises employees to increase productivity as per the "Efficiency Wage Theory".

As per the Efficiency Wage Theory, employees consistently provide higher effort levels in response to higher wages. This is the opposite effect compared to the welfare trap theory. Workers feel that higher wages in employment should be matched with higher levels of productive activity. There are four different ways in which firms can benefit from paying efficiency wages: higher employee effort; lower employee turnover; attracting higher quality employees; and more healthy employees. Furthermore, basic income reduces the impact on workers of demands for remittances. This allows workers to channel more of their wages to productivity-enhancing consumption and human capital investment, increasing firm competitiveness and thus raising production and the demand for labour.

5. Economic and Socio-Economic Impacts of Basic Income Assistance

Economic growth is the increase in the value of goods and services in an economy over time and is widely viewed as the main driver of prosperity in a country. The change in Gross Domestic Product ("GDP") over time is the most common measure of economic growth. GDP is often expressed on a per capita basis to test the relative wealth of a country's citizens, and hence development. There are a number of criticisms regarding GDP when taken as a single measure of a country's development, particularly in relation to poverty reduction – the main criticism being that GDP ignores the distribution of income among the population. If reducing poverty is important, then the impact of economic growth among households of different income groups should be illustrated.

Recently, interest in pro-poor growth has shifted towards the idea of "inclusive growth". Inclusive growth is concerned with the final distribution of income between groups representing the extent to which the poor can participate in growth processes through increased and better employment. Therefore, alongside concerns with increasing aggregate economic growth, the nature of that growth (the extent to which it is sustainable and includes the poor) is important because it can lead to long-term movement out of poverty for poor households.

One of the ways of measuring the effects of basic income assistance is the circular flow model of the economy. As Krugman (2019) describes, "*The circular flow model is an economic model that shows the flow of money through the economy. Households purchase goods and services; which businesses provide through the product market. Businesses, meanwhile, need resources in order to produce goods and services. Members of households provide labour to businesses through the resource market. In turn, businesses convert those resources into goods and services*". The premise is that the economy is defined by a series of flows between actors in the economy, namely, households, firms, governments and the rest of the world. Broadly, these actors are involved in transactions that involve the flow of goods and services in exchange for money in the economy. For example, the household provides labour to the firm in exchange for wages, which are spent in the goods and services market in exchange for the products for consumption. This is the most simplistic way of viewing the economy and the dynamics resulting from basic income assistance that flows through the economy. In short, basic income assistance will provide positive shocks to income and employment, that then flows back into the economy in the form of higher household and firm demand for intermediate and final products (demand for goods that are used in the production of other goods), and therefore providing further stimulus through the multiplier effect. This allows for an economy-wide view of the economy and the relevant impact.

5.1. Microeconomic Impacts

The effects of basic income assistance on productivity and growth at the micro level are important for two reasons. First, basic income assistance could contribute to overall economic growth. Second, basic income assistance plays a role in contributing to inclusive growth, which is important if development objectives are to reduce poverty and ensure a more sustainable growth path.

As discussed earlier, social protection through basic income grants supports investment into human capital development via several avenues, including: improved nutrition; health care; housing; and transportation. The importance of human capital, in particular with respect to health education, in social and economic development is widely accepted. There is a strong correlation between GDP per capita and education levels and life expectancy as a proxy for the level of health in a population.

Poverty is defined as the state or condition in which a person or community lacks the financial resources and essentials for a set minimum standard of living. The social determinants of poverty are health, education, and housing. Therefore, human capital development is critical in the reduction of poverty and inclusive growth. As such, basic income assistance has the potential to enable excluded groups such as women to participate in the economic growth processes.

Over the long-term, basic income assistance can help break the cycle of inter-generational poverty by overcoming the savings and credit constraints preventing human capital investments. Inter-generational poverty is the phenomenon whereby a household whose socio-economic circumstances are poor (poor health, nutritional and education levels) are more likely to pass these levels of poverty onto their children unless for periods of rapid economic growth, or significant state support.

Basic income assistance can also enable poor households to accumulate productive assets such as livestock, leading to sustained higher incomes through these livelihood investments.

Basic income assistance also plays an insurance role in that it helps prevent the loss of productive capital, which generally includes productive assets and human capital, following shocks. Basic income assistance can reduce or prevent the need for distress selling of productive assets such as livestock. Further, basic income assistance can help prevent the need for other negative and harmful coping strategies aftershocks such as reducing food intake, which may deteriorate human capital.

Based on the insurance role that basic income assistance plays, households are able to invest in livelihood strategies that yield higher returns. We define higher return livelihood strategies as the ability of households to defer consumption, or in other words, save for later. Examples of this in the South African context are “*stokvels*” and collective or community investment schemes. Poorer households tend to lack the ability to save as the majority of the income is often used for current consumption, or to repay debts. These higher return livelihoods strategies often come with levels of risk that are often too high for poor households to carry without the assurance of basic income assistance.

Further microeconomic effects include the impact on labour market participation, which is discussed above.

5.2. Macroeconomic Impacts

Social protection could impact macro-level economic growth directly, through increasing household productivity and employment, stimulating aggregate demand, affecting labour force participation, and influencing savings and taxation.

As discussed above, there is a strong correlation between GDP per capita and education levels and life expectancy as a proxy for the level of health in a population. Therefore, higher economic growth is considered likely by increasing household productivity and employment.

Basic income assistance stimulates aggregate spending and hence aggregate demand through the multiplier effect. This leads to increased economic activity, which promotes economic growth. There is also potential leakage of the income out of the country. For example, as households move up the income spectrum, their consumption moves away from traditional non-durable and semi-durable goods, such as food items and cosmetics; towards durable goods such as appliances and vehicles. For many countries, much of the inputs into appliances are produced overseas, and as such, a portion of the basic income assistance received goes to overseas labour and firms and

is therefore lost to the local economy. The level of value-add of the good determines the knock-on impact on the economy. For example, goods produced in South Africa with a high primary component (raw mining goods such as coal and iron ore) will receive a smaller impact on the economy than goods with higher value adds such as rolled steel.

Furthermore, lower income groups tend to concentrate spending on labour-absorbing sectors of the economy. These are domestically produced goods such as food items and other semi-durable goods. Income transfers to the poor shift aggregate demand towards labour intensive job-creating industries, because it increases the consumption of the poor, the composition of which is relatively labour-intensive.

Financing increased social protection through higher taxation, will counter the multiplier effect by redistributing the funds to lower income groups. The net effect will depend on the relative size of the multipliers across income groups as well as the size of the redistribution of funds across the income groups. Furthermore, traditional economic theory suggests that any form of redistribution reduces growth as the rich have higher rates of savings than the poor and higher taxation reduces incentives to innovate. These models assume that social protection is simply income redistribution from productive to unproductive people.

Report 4

Impact of the NSSF on Savings and Investments



Author: ***Costing conducted by the Actuarial & Analytical Solutions (A&AS) Team at Deloitte and Touché South Africa***

November 2019

REPORT 4: IMPACT OF THE NATIONAL SOCIAL SECURITY FUND ON SAVINGS AND INVESTMENTS

Title:	Impact of the National Social Security Fund on Savings and Investments
Date:	November 2019
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ABBREVIATIONS AND ACRONYMS

FSCA	Financial Sector Conduct Authority
GEPF	Government Employees Pension Fund
ILO	International Labour Organisation
JMCA	Jacques Malan Consultants and Actuaries
NSP	New Solidarity Pillar
NSSF	National Social Security Fund
OAG	Old Age Grant
OECD	Organisation for Economic Co-operation Development
PAYG	Pay-As-You-Go
QLFS	Quarterly Labour Force Survey
SARB	South African Reserve Bank
SARS	South African Revenue Service
StatsSA	Statistics South Africa
UIF	Unemployment Insurance Fund

EXECUTIVE SUMMARY

Background

The aim of this report is to assess the potential impact of the National Social Security Fund (NSSF) on savings and investment markets. These impacts include:

- Changes in the flow of funds between households, financial intermediaries and government;
- Changes in consumption, saving and investment behaviour of households and firms;
- Changes in the financing of business investment and in capital market flows; and
- Existing retirement funds.

The existing retirement funding structure in South Africa for formally employed individuals, consists of a tax-incentivised pension sector with accumulated assets of approximately R 4 trillion across approximately 5 300 approved retirement funds. In addition, the State provides Old Age Grants (OAG) to those deemed to need such a grant. Despite the current tax-incentivised retirement funding structure, more than two-thirds of South Africans reach retirement age without a funded pension benefit due to the lack of provisions and/or insufficient savings during their working lives and therefore rely on the OAG. This however, is due to South Africa's high unemployment rate. Although contributory savings and insurance assists in providing basic income protection for some South Africans, access to appropriate retirement provisions for low-income earners remains limited due to high administration costs and minimum contribution constraints.

The NSSF will be a defined-benefit social security fund in the form of a centrally managed public fund that aims to provide adequate retirement and risk benefit provision for the working population of South Africa.

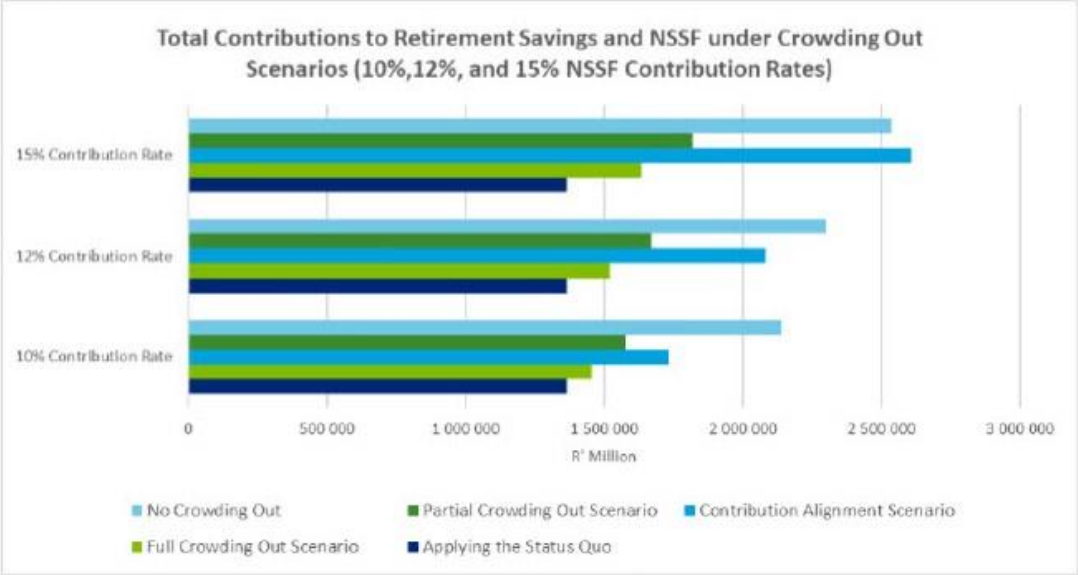
Changes in the Flow of Funds Between Households, Financial Intermediaries and Government

Various scenarios have been considered with respect to how retirement savings[48] may change under Implementing the NSSF due to the impact of crowding out (Full Crowding Out). Contributions may reduce by less than the amount of NSSF contributions payable by the individual if they are high-income earners (Partial Crowding Out). Employers may align contribution rates in occupational funds to NSSF contributions rates (Contribution Alignment Scenario)

Under the various crowding out scenarios, the total of contributions towards the NSSF and retirement savings is either greater or less than contributions towards retirement savings with no implementation of the NSSF. As illustrated below, unless those individuals who are high earners who are currently covered in respect of retirements savings significantly reduce their contributions to retirement (which will be limited by the quasi-mandatory nature of Pillar 3), the implementation of the NSSF is not likely to reduce ongoing contributions to retirement savings. It is noted that this analysis excludes the impact of the NSSF Supplementary Fund that contributions to the NSSF and retirement savings reflected in the graph above are net of administration fees.

[48] Retirement savings includes approved pension, provident and retirement annuity funds and hence forms part of Pillar 3 of South Africa's proposed social security system.

Figure i: Total Contributions to Retirement Savings and NSSF under Crowding Out Scenarios (10%, 12% and 15% NSSF Contribution Rates)



The corresponding change in the total of projected retirement savings and the NSSF as at 31 December 2025 under the various scenarios assuming contribution rates of 10%, 12%, 15% and 6% (retirement benefits only) respectively to the NSSF and allowing for the alternative investment strategies for the NSSF are set out below. This allows for differing investment strategies in respect of the NSSF, namely, investment in line with Regulation 28 and a conservative investment strategy (80% allocation to South African bonds).

Table i: Change in Projected Retirement Savings and NSSF as at 31 December 2025 under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, Formal Employment, Regulation 28 Investment Strategy)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate	6% Contribution Rate
Full Crowding Out Scenario	160 541	257 824	422 296	-213 591
Contribution Alignment Scenario	534 900	1 008 389	1 718 623	160 769
Partial Crowding Out Scenario	295 416	419 674	624 608	-78 716
No Crowding Out	934 955	1 134 312	1 433 348	560 824
Applying the Status Quo	-	-	-	-

Table ii: Change in Projected Retirement Savings and NSSF as at 31 December 2025 under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates NSSF contribution rates, Formal Employment, Conservative Investment Strategy)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate	6% Contribution Rate
Full Crowding Out Scenario	160 541	257 824	422 296	-213 591
Contribution Alignment Scenario	534 900	1 008 389	1 718 623	160 769
Partial Crowding Out Scenario	295 416	419 674	624 608	-78 716
No Crowding Out	934 955	1 134 312	1 433 348	560 824
Applying the Status Quo	-	-	-	-

Allowing for the participation of informally employed individuals, the change in projected retirement savings and NSSF as at 31 December 2025 is set out below:

Table iii: Change in Projected Retirement Savings and NSSF as at 31 December 2025 under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, Formal Employment and Informal Employment, Regulation 28 Investment Strategy)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate	6% Contribution Rate
Full Crowding Out Scenario	336 194	470 780	691 205	-107 578
Contribution Alignment Scenario	710 554	1 221 345	1 987 532	266 782
Partial Crowding Out Scenario	471 069	632 630	893 517	27 297
No Crowding Out	1 110 609	1 347 268	1 702 257	666 837
Applying the Status Quo	-	-	-	-

Table iv: Change in Projected Retirement Savings and NSSF as at 31 December 2025 under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, Formal Employment

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate	6% Contribution Rate
Full Crowding Out Scenario	310 499	439 690	652 024	-122 895
Contribution Alignment Scenario	684 858	1 190 256	1 948 352	251 465
Partial Crowding Out Scenario	445 374	601 540	854 337	11 981
No Crowding Out	1 084 913	1 316 179	1 663 077	651 520
Applying the Status Quo	-	-	-	-

Allowing for the NSSF earnings ceiling to be set equal to the current Unemployment Insurance (UIF) earnings limit, the change in projected retirement savings and NSSF as at 31 December 2025 is set out below:

Table v: Change in Projected Retirement Savings and NSSF as at 31 December 2025 under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, NSSF earnings ceiling equal to UIF earnings limit, Formal Employment, Regulation 28 Investment Strategy)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate	6% Contribution Rate
Full Crowding Out Scenario	165 123	233 725	349 016	-115 430
Contribution Alignment Scenario	587 097	1 067 919	1 789 151	306 545
Partial Crowding Out Scenario	246 381	331 235	470 903	-34 171
No Crowding Out	700 015	849 277	1 073 170	419 463
Applying the Status Quo	-	-	-	-

Table vi: Change in Projected Retirement Savings and NSSF as at 31 December 2025 under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, NSSF earnings ceiling equal to UIF earnings limit, Formal Employment, Conservative Investment Strategy)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate	6% Contribution Rate
Full Crowding Out Scenario	148 929	214 130	324 318	-125 069
Contribution Alignment Scenario	570 904	1 048 324	1 764 454	296 905
Partial Crowding Out Scenario	230 187	311 640	446 206	-43 811
No Crowding Out	683 821	829 682	1 048 473	409 823
Applying the Status Quo	-	-	-	-

The total of accumulated retirement savings and the NSSF as at 31 December 2025, is lowest under the Full Crowding Out for all scenarios considered considering NSSF contributions as at rate of 10%, 12 %, 15% and 6% (retirement benefits only). In line with the change in total contributions towards the NSSF and retirement savings, allowing for the participation of the informally employed, increases the projected accumulation of the NSSF and retirement savings to a greater extent that setting the NSSF earnings ceiling equal to the UIF earnings limit.

Based on the projected accumulation of retirement savings under the various scenarios, accumulated retirement savings and the NSSF is not expected decrease over the period considered with the exception of a NSSF contribution rate of 6% towards retirement benefits. However over the long term, the segregation of funding for retirement benefits in the NSSF, increases the sustainability of the NSSF over the long term (discussed below).

It is noted that where the level of savings and investments attributed to the retirement system after implementation of the NSSF, compared to Applying the Status Quo, is expected to increase over the period considered, any increase in savings channelled to the retirement system may be offset by decreases in individuals 'discretionary savings.

Funds channelled through financial intermediaries are therefore not expected to reduce given the implementation of the NSSF. However, the underlying asset allocation will differ dependent on the investment strategy of the NSSF. In particular, based on the projected asset allocation of funds in 2025, allowing for no implementation of the NSSF, investment in government bonds in projected to reach R 1 697 billion assuming investment in line in asset allocations as at 31 December 2019. Allowing for the implementation of the NSSF with an investment strategy in line with Regulation 28, investment in government bonds is projected to reach R 1 943 billion and investment in South African Equities R 3 575 billion under the Full Crowding Out Scenario allowing for NSSF contributions of 15%. Allowing for the implementation of the NSSF with a conservative investment strategy, investment in government bonds is projected to reach R 2 421 billion and investment in South African Equities R 3 275 billion under the Full Crowding Out Scenario allowing for NSSF contributions of 15%.

Allowing for alternative crowding out scenarios will increase investment in South African equities and bonds further. If the informally employed participate in the NSSF and the NSSF earnings ceiling is set equal to the UIF earnings limit, projected accumulation of the NSSF and retirement savings is increased further. The resulting investment in South African equities and bonds will therefore increase.

Considering longer term projections, the present value of savings and investments attributed to the retirement system under Implementing the NSSF is maximised allowing for a 15% contribution rate or a 6% contribution rate to retirement benefits only.

Table vii: Present Value of the Total of Accumulated Retirement Savings and the NSSF under Implementing the NSSF compared to Applying the Status Quo under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, Formal Employment, Conservative Investment Strategy)

R' Million	Applying the Status Quo	Full Crowding Out Scenario	Contribution Alignment Scenario	Partial Crowding Out Scenario
10% Contribution Rate	142 785 822	141 370 721	158 621 279	149 055 202
12% Contribution Rate	142 785 822	163 730 643	198 654 311	172 952 016
15% Contribution Rate	142 785 822	224 413 917	284 537 071	235 940 611
6% Contribution Rate	142 785 822	214 296 115	231 546 673	221 980 597

Table viii: Present Value of the Total of Accumulated Retirement Savings and the NSSF under Implementing the NSSF compared to Applying the Status Quo under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, Formal Employment and Informal Employment, Conservative Investment Strategy)

R' Million	Applying the Status Quo	Full Crowding Out Scenario	Contribution Alignment Scenario	Partial Crowding Out Scenario
10% Contribution Rate	142 785 822	197 185 797	214 436 355	204 870 278
12% Contribution Rate	142 785 822	191 451 613	226 375 281	200 672 986
15% Contribution Rate	142 785 822	184 160 516	244 283 669	195 687 209
6% Contribution Rate	142 785 822	249 550 164	266 800 722	257 234 645

Table ix: Present Value of the Total of Accumulated Retirement Savings and the NSSF under Implementing the NSSF compared to Applying the Status Quo under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, NSSF earnings ceiling equal to UIF earnings limit, Conservative Investment Strategy)

R' Million	Applying the Status Quo	Full Crowding Out Scenario	Contribution Alignment Scenario	Partial Crowding Out Scenario
10% Contribution Rate	142 785 822	145 963 263	165 905 196	150 592 945
12% Contribution Rate	142 785 822	163 950 348	203 557 665	169 505 966
15% Contribution Rate	142 785 822	213 476 995	281 858 272	220 421 518

Compared to Applying the Status Quo, the level of savings and investments attributed to the retirement system after implementation of the NSSF is expected to increase initially under all scenarios with the exception of a NSSF contribution rate of 6% towards retirement benefits only, where there is projected to be an insignificant decrease over the first ten years after implementation of the NSSF. The level of savings and investments then reaches a peak under the various scenarios and falls below 100% for under all scenarios with the exception of the Contribution Alignment scenario at a NSSF contribution rate of 15% allowing for participation of the formally and informally employed.

The impact of a higher NSSF contribution rate, 12% or 15% compared to 10% of earnings up to the NSSF earnings ceiling, is to increase the level to which accumulated funds build up as a result of higher funding for a fix set of benefits at higher NSSF contribution levels, allowing for larger accumulation of the NSSF before funds are depleted and the NSSF is assumed to move into a pay-as-you-go basis.

The impact of segregating funding for retirement benefits in the NSSF, allowing for a 6% contribution rate, increases the sustainability of the NSSF and hence, while it does not reach the maximum levels of savings and investment

demonstrated under the other contribution rate scenarios, it minimises the drop in the level savings and investment over the 100 period.

The level of NSSF contributions therefore impacts on the level of savings and investments attributed to the retirement system over the period considered. This is as a result of higher funding for a fix set of benefits at higher NSSF contribution levels, allowing for larger accumulation of the NSSF before funds are depleted and the NSSF is assumed to move into a pay-as-you-go basis.

It is noted that the underlying investment strategy will influence the underlying asset allocation will differ dependent on the investment strategy of the NSSF. Investments under the NSSF may favour debt markets and public sector funding (conservative investment strategy) resulting in reduced level of investment for other asset classes even where the overall level of savings after implementation is expected to increase. This may increase the cost of capital for the private sector or increase the cost of equity compared to debt. Increases to the cost of capital for private sector will reduce the demand for investment or change the relative attractiveness of equity versus debt.

Changes in Consumption, Saving and Investment Behaviour of Households and Firms

Under the Full Crowding Out Scenario, full displacement of contributions due to the NSSF will result in no change in consumption for those covered individuals where current effective contributions rates are higher than the NSSF contribution rate. Where effective contribution rates are lower than the NSSF contribution rate, reduced consumption will be required in respect of these individuals if borrowing is note increased to maintain consumption levels. Therefore, the impact on consumption and borrowing is dependent on the NSSF contribution rate. The table below sets out the reduction in possible consumption resulting from the implementation of the NSSF (assuming no increase in borrowing). This is based on an assumption that employers will meet approximately 60% of the increase in contributions based on an analysis of IRP5 data for the 2017 and 2018 tax years.

Table x: Full Crowding Out Scenario: Reduction in Consumption by Households Covered in Respect of Retirement Savings on NSSF Implementation (10%, 12% and 15% NSSF contribution rates)

R' million	2020	2021	2022	2023	2024
10% Contribution Rate	8 743	9 152	9 569	10 112	10 696
12% Contribution Rate	14 384	15 075	15 786	16 703	17 673
15% Contribution Rate	24 556	25 550	26 599	28 012	29 516

It is noted that in respect of these individuals it has been assumed that any increases in the absolute value of contributions payable will be met by the individual and not their employer. As per the table above, the reduction in consumption is linked to the level of NSSF contributions. It is noted that the impact of reduced consumption will be more significant for low-income earners, particularly, if a NSSF contribution rate of 15% is implemented. This can be mitigated by transitioning in the requirement for contributions to the NSSF.

Approximately half of formally employed individuals are not covered in respect of retirement savings. The implementation of the NSSF will result in a reduction in consumption for these individuals if borrowing is not increased to maintain consumption levels resulting from the requirement to pay contributions to the NSSF on earnings to the earnings ceiling, if earning above the NSSF earnings floor. The table below sets out the reduction in consumption resulting from the implementation of the NSSF.

Table xi: Reduction in Consumption by Households not Covered in Respect of Retirement Savings on NSSF Implementation (10%, 12% and 15% NSSF contribution rates)

R' million	2020	2021	2022	2023	2024
10% Contribution Rate	27 157	28 314	28 908	29 820	30 760
12% Contribution Rate	32 587	33 977	34 690	35 785	36 911
15% Contribution Rate	40 734	42 472	43 362	44 731	46 139

Given the low coverage rates in respect of retirement savings based on formal employment for low-income earners, the impact of consumption will be most significantly felt by these individuals, given their ability to borrow is limited compared to high-income earners. It is noted that the average earnings of these individuals is R 45 000 in 2021 terms. Half of the contributions due to the NSSF will be met by employers, therefore firms will face increased employment expenditure in line with the figures set out in the table above. This will impact low-income earners more significantly and employment levels. It is therefore proposed that wage subsidies could be implemented to minimise disruptions to the demand of supply of labour associated with the introduction of mandatory contributions.

The tables below set out the expected contribution subsidy resulting from the implementation of the NSSF. This has been calculated based on a full subsidy of contributions for those individuals 'earnings less than the legislated minimum wage[49] and the SARS tax threshold for comparison purposes.

Table xii: Contribution Subsidy for Individuals Earnings less than the Minimum Wage and not Covered in Respect of Retirement Savings on NSSF Implementation (10%, 12% and 15% NSSF contribution rates)

R' million	2020	2021	2022	2023	2024
10% Contribution Rate	7 828	8 192	8 653	9 236	9 858
12% Contribution Rate	9 394	9 830	10 384	11 084	11 830
15% Contribution Rate	11 742	12 287	12 980	13 854	14 788

Table xiii: Contribution Subsidy for Individuals Earnings less than the SARS Tax Threshold and not Covered in Respect of Retirement Savings on NSSF Implementation (10%, 12% and 15% NSSF contribution rates)

R' million	2020	2021	2022	2023	2024
10% Contribution Rate	20 280	21 409	22 616	24 139	25 106
12% Contribution Rate	24 335	25 691	27 139	28 967	30 127
15% Contribution Rate	30 419	32 113	33 924	36 209	37 659

Changes in the Financing of Business Investment and in Capital Market Flows

The extent to which the NSSF can support the State's ability to fund new business and infrastructure development will depend on the investment strategy that the Board of Trustees decides on.

Given reduced sentiment towards South Africa, any reduced demand for South Africa government bonds can be mitigated to some extent by the increased funds available through implementation of the NSSF over the period to 2025, particularly in relation to a conservative investment strategy for the NSSF.

Considering the long-term projections presented in Section **3.6.2**, the overall level of savings and investments attributed to retirement savings under Implementation of the NSSF is expected to surpass the overall level of savings and investments attributed to retirement savings under Applying the Status Quo over at least the next 30 years, with the exception of a NSSF contribution rate of 6% towards retirement benefits only, where there is projected to be an insignificant decrease over the first ten years after implementation of the NSSF. After reaching a maximum level, depending on crowding out scenario and NSSF contribution level, the overall level of savings and investments attributed to retirement savings under Implementation of the NSSF reduces. Under all the scenarios except for the Contribution Alignment Scenario at a NSSF contribution rate of 15%, the level of savings and investment reduces to less than the overall level of savings and investments attributed to retirement savings under Applying the Status Quo after 30 years. This can be mitigated by increasing NSSF contribution rates at pre-defined milestones over the period considered to maintain a minimum level of the NSSF.

[49] Employment and Labour on new National Minimum Wage rate | South African Government (www.gov.za)

Impact on Existing Retirement Funds

The following number of formally employed individuals are expected to be covered in terms of retirement savings over the period 2020 to 2025 allowing for Implementation of the NSSF and the various crowding out scenarios. Coverage has been calculated as the proportion of the formally employed who contribute to retirement savings. It therefore does not allow for individuals who belong to more than one retirement savings vehicle.

Table xiv: Covered Formally Employed Individuals from 2020 to 2024 (Base Scenario)

	2020	2021	2022	2023	2024	2025
Full Crowding Out Scenario (10% NSSF Contribution Rate)	5 065 593	5 157 948	5 171 101	5 177 906	5 238 540	5 299 883
Full Crowding Out Scenario (12% NSSF Contribution Rate)	5 065 593	2 448 425	2 466 436	2 488 137	2 538 508	2 602 656
Full Crowding Out Scenario (15% NSSF Contribution Rate)	5 065 593	2 264 970	2 277 717	2 293 517	2 320 374	2 347 549
Contribution Alignment Scenario	5 065 593	2 743 990	2 901 607	2 909 218	2 946 534	2 981 176
Partial Crowding Out Scenario(10% NSSF Contribution Rate)	5 065 593	2 448 425	2 466 436	2 488 137	2 538 508	2 602 656
Partial Crowding Out Scenario (12% NSSF Contribution Rate)	5 065 593	2 264 974	2 277 722	2 293 520	2 320 377	2 347 549
Partial Crowding Out Scenario(15% NSSF Contribution Rate)	5 065 593	1 648 468	1 652 672	1 752 543	1 823 804	1 911 498

Over the short-term, the impact on accumulated retirement savings as at 31 December 2025, is highest under the Full Crowding Out Scenario (15% NSSF contribution rate) given this scenario results in the most significant reduction in contributions to retirement savings.

Table xv: Change in Retirement Savings as at 31 December 2025 under Crowding Out Scenarios (10%, 12% and 15% NSSF contribution rates)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate
Full Crowding Out Scenario	- 774 415	- 876 488	- 1 011 052
Contribution Alignment Scenario	- 400 055	- 125 923	285 275
Partial Crowding Out Scenario	- 639 540	- 714 638	- 808 740
No Crowding Out			

Allowing for a NSSF earnings ceiling equal to the UIF earnings limit, the corresponding change in retirement savings as at 31 December 2025 under the various scenarios assuming contribution rates of 10%, 12% and 15% respectively to the NSSF is set out below:

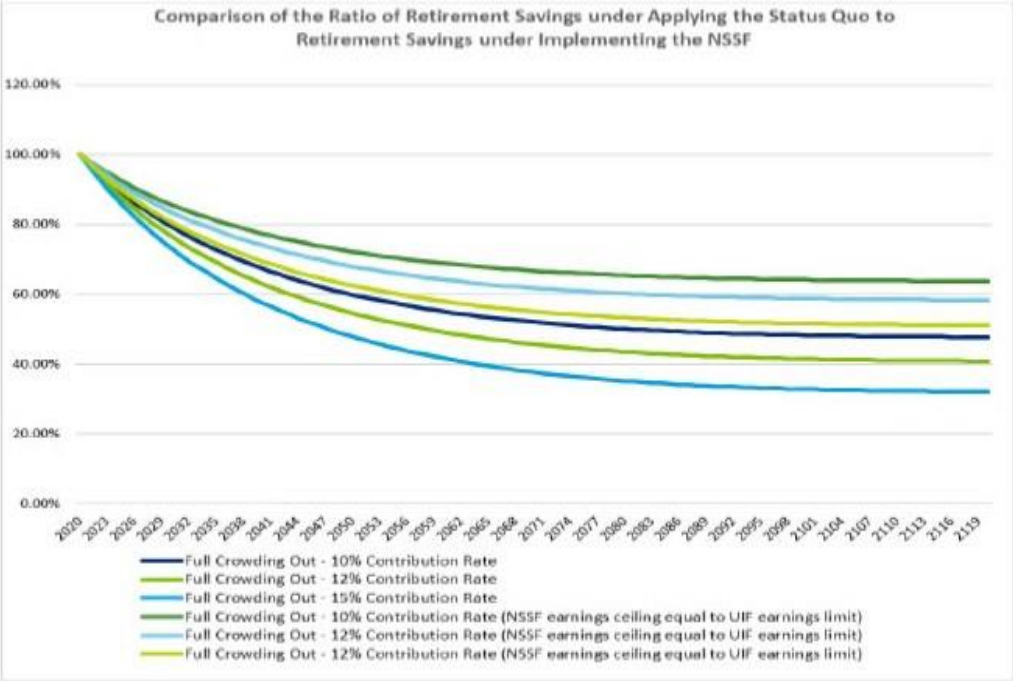
Table xvi: Change in Retirement Savings as at 31 December 2025 under Crowding Out Scenarios (10%, 12% and 15% NSSF contribution rates, NSSF earnings ceiling equal to UIF earnings limit)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate
Full Crowding Out Scenario	-534 892	-615 552	-724 154
Contribution Alignment Scenario	-112 918	218 642	715 981
Partial Crowding Out Scenario	-453 634	-518 042	-602 267
No Crowding Out	-	-	-

As noted above, reducing the NSSF earnings ceiling to the current UIF limit reduces the extent to which contributions to retirement savings are crowded out under the various crowding out scenarios hence increases projected retirement savings for all scenarios relative to an NSSF earnings ceiling of R 276 000 in 2018 terms.

Over the long term, the implementation of the NSSF will reduce the accumulation of retirement savings compared to under Applying the Status Quo. The ratio of accumulated retirement savings under Implementing the NSSF to under Applying the Status Quo has been projected over a 100-year period assuming a NSSF contribution rate of 10%, 12% and 15% respectively. This projection has been done under the Full Crowding Out Scenario.

Figure ii: Comparison of the Ratio of Retirement Savings under Applying the Status Quo to Retirement Savings under Implementing the NSSF (10%, 12% and 15% NSSF Contribution Rates)



The reduction in the ratio of accumulated retirement savings under Implementing the NSSF to under Applying the Status Quo is significant over the first 34 years, after which the reduction slows until equilibrium is reached at 48% of accumulated retirement savings under Applying the Status Quo assuming NSSF contributions of 10%, 41% of accumulated retirement savings under Applying the Status Quo assuming NSSF contributions of 12% and 32% of accumulated retirement savings under Applying the Status Quo assuming NSSF contributions of 15%.

If the NSSF earnings ceiling is set equal to the current UIF earnings limit, equilibrium is reached at 64% of accumulated retirement savings under Applying the Status Quo assuming NSSF contributions of 10%, 58% of accumulated retirement savings under Applying the Status Quo assuming NSSF contributions of 12% and 51% of accumulated retirement savings under Applying the Status Quo assuming NSSF contributions of 15%.

1. INTRODUCTION TO THE RESEARCH ON THE IMPACT OF THE NSSF ON THE SAVINGS AND INVESTMENTS MARKET

1.1. Background and Introduction

"Everyone has the right to have access to: (c) social security, including, if they are unable to support themselves and their dependents, appropriate social assistance."
- The Constitution Section 27 (1) (c)

The South African Constitution states, in Section 27 (1) (c), that the Government is mandated to provide support to those who are unable to support themselves. In addition, as Section 28 (2) of the Constitution states, the Government should take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of this right. One of the challenges in respect of social security and assistance facing the country's working population is access to appropriate and adequate retirement benefits, with which the planned implementation of the National Social Security Fund (NSSF or the Fund) will seek to address.

The existing retirement funding structure in South Africa for formally employed individuals, consists of a tax-incentivised pension sector with accumulated assets of approximately R 4 trillion across approximately 5 300 approved retirement funds. In addition, the State provides Old Age Grants to those deemed to need such a grant. Despite the current tax-incentivised retirement funding structure, more than two-thirds of South Africans reach retirement age without a funded pension benefit due to the lack of provisions and/or insufficient savings during their working lives and therefore rely on the Old Age Grant. Although contributory savings and insurance assists in providing basic income protection for some South Africans, access to appropriate retirement provisions for low-income earners remain limited due to high administration costs and minimum contribution constraints.

The National Social Security Fund (NSSF) will be a defined-benefit social security fund in the form of a centrally managed public fund that aims to provide adequate retirement and risk benefit provision for the working population of South Africa.

A broader risk pool across the entire workforce will be promoted by the centralisation of the fund. The centralisation of the fund is expected to reduce administrative costs due to the reduction in the complexity of the funds (by standardizing the benefits for all contributors) and the emergence of economies of scale. The NSSF will also aim to be inclusive by ensuring a minimum level of protection and offer risk benefits to all contributors from the outset for all participants, which will foster social solidarity among both low income and high-income earners of the country.

In order to ensure a minimum level of protection immediately for all participants, it is proposed that the NSSF will operate on a partially funded basis on a Pay-As-You-Go (PAYG) component as well as an accumulation of contributions to meet future requirements. The Fund may therefore be subject to a 5% minimum long-term reserve requirement and will have mandatory employer and employee contributions at the NSSF contribution rate (either 10%, 12% or 15% of earnings up to the NSSF earnings ceiling for those individuals earning above the NSSF earnings floor). The NSSF default fund will compete with current retirement funds on supplementary contributions above the NSSF contribution rate by encouraging consumers, including those who are not covered by retirement savings on implementation of the NSSF, to allocate these supplementary contributions to the NSSF through tax and other incentives.

The implementation of the NSSF will have an impact on household consumer saving and investment behaviour towards retirement savings. These impacts may be dependent on the age and income of the consumer and on the suitability of the NSSF as a substitute for the current retirement system. If it is a good substitute (i.e. benefits for NSSF are at least equal to the benefits of the current retirement system for the same contribution rate), then the implementation of the NSSF is expected not to have a substantial impact on overall consumer savings in that overall levels of consumer savings will largely be unchanged as contributions payable to the NSSF will be matched by an equal reduction in contributions to retirement savings. This will only be possible to the extent that changes to occupational schemes, for example, the closing down of occupational schemes where the majority of members earn in line with the NSSF earnings ceiling or the design of occupational schemes allow this, for example, flexibility in choice of contribution rates to occupational funds. A further impact may result from existing retirement fund members wanting to encash benefits prior to the introduction of the NSSF, as has been observed in response to proposed changes to rights to access retirement benefits, for example, the annuitisation of provident funds

If it is perceived not to be a good substitute, then the implementation of the NSSF is expected to have a significant impact on household consumer savings and investment behaviour – overall consumer savings may increase in that contributions payable to the NSSF will not be matched by an equal reduction in contributions to retirement savings.

Other factors that need to be considered are the individual's borrowing constraints and retirement age. Borrowing constraints may limit current workers' responses to the NSSF as any requirement to contribute to the NSSF if the individual is not covered in respect of retirement savings at the implementation of the NSSF will result in reduced discretionary savings or reduced consumption impacting on their welfare.

The impact on overall household saving rates may reduce should employees believe that the NSSF will provide sufficient income in retirement and adequate risk benefits and therefore do not make supplementary contributions. This risk is multiplied due to the financial illiteracy that many South Africans currently face. Low-income earners, previously not covered will be protected by a contribution subsidy so as to ensure their inclusion in the NSSF.

The impact on the State's ability to fund new business and infrastructure development will depend on the investment strategy that the Board of Trustees of the NSSF wants the fund to undertake. If the NSSF's Board of Trustees follows conventional retirement fund strategies, it would mean that the contributor's contributions are invested in, generally, the same assets that they were invested in through their old retirement funds, the only change would be the financial intermediary facilitating those investments. However, if the NSSF's Board of Trustees plan to implement their own investment strategies, they may see it viable to use the contributions to fund the country's infrastructure development and invest in local new businesses in an effort to grow the economy. This may be restricted to some extent by regulators. Investment in local infrastructure development and new business will not necessarily increase local investments but rather will shift the asset allocation of the local investment arena. The shift in asset allocation will have a secondary effect on foreign investment in the country as assets will be priced differently due to their change in demand and supply.

The NSSF will significantly impact existing retirement funds in relation to the size of funds under management and whether they remain viable in operating for example, funds that target lower-income employees who may find it challenging to make any further contributions above the mandatory NSSF contribution. These lower-income employees are likely to benefit from the NSSF given reduced expenses due to economies of scale and possibly better benefits. Occupational and voluntary funds will compete for an individual's retirement investment above the NSSF contribution threshold. These funds will need to adapt their contribution and benefit structures to account for the loss of the contributions redirected towards the NSSF. Current schemes will be assessed with respect to contributions and benefits and schemes that do not meet the required standards will be expected to either merge with other funds, or close with members transferred to the NSSF.

1.2. Purpose of the Report

The aim of this report is to assess the potential impact of the NSSF on savings and investment markets. These impacts include:

- Changes in the flow of funds between households, financial intermediaries and government;
- Changes in consumption, saving and investment behaviour of households and firms;
- Changes in the financing of business investment and in capital market flows; and
- Existing retirement funds.

1.3. Sources of Data and Information

The project made use of data obtained from tabled budget information (2020 Budget Statement, 2020 Supplementary Budget Statement[50] from National Treasury, the South African Revenue Service (SARS) Individual Panel Data, various Statistics South Africa (StatsSA) reports (including underlying data), Financial Sector Conduct Authority (FSCA) and South African Reserve Bank (SARB) reports. Aside from the above-mentioned data sources, a variety of documents and reports were utilised in the qualitative analysis as set out in the annexures below.

[50] Economic forecasts relating to the 2020 Supplementary Budget Review was also sourced from the following International Monetary Fund document: https://www.imf.org/en/Publications/CR/Issues/2020/07/28/South-Africa-Request-for-Purchase-Under-the-Rapid-Financing-Instrument-Press-Release-Staff-49612

Table 1: Data Sources

Data/Information	Source
2020 Budget Review 2020 Supplementary Budget Review	National Treasury
SARS Individual Panel and IRP 5 Data	National Treasury (SA-TIED)
Quarterly Labour Force Survey (Q1, 2020)Mid-year population estimates (2019)	StatsSA (www.statssa.gov.za)
Registrar of Pension Funds Annual ReportsCollective Annual Schemes Annual Reports Life Insurers Annual Returns	FSCA
National Financial Accounts (Q1, 2020)	Reserve Bank

1.4. Limitations of the Study

Projections set out in this report are estimates only. The projections are highly dependent on the data used and various assumptions adopted. Projections should therefore be treated with caution.

2. POTENTIAL IMPACT OF THE NATIONAL SOCIAL SECURITY FUND

2.1. Background: South Africa's Retirement Funding System

The discussion document, "Comprehensive Social Security in South Africa", prepared by the Inter-Departmental Task Team (IDTT) on Social Security and Retirement Reform published in March 2012 proposed the following social security system be introduced in South Africa in respect of retirement savings:

- **Pillar 1** comprises the Old Age Grant (OAG) (also known as the Old Persons Grant). This is the main source of income for a majority of South Africans over the age of 60 years, many of which have many years of formal and informal employment under their belt. This grant system is considered to be well administered despite difficulties that arise through the application of means-testing.
- **Pillar 2** will comprise of the National Social Security Fund (NSSF).
- **Pillar 3** will comprise various pension and provident funds arrangements that are usually linked to the formal employment sector (occupational funds). In addition, voluntary retirement savings can be made through retirement annuities. It is further proposed that Pillar 3 will include a NSSF Supplementary Fund that will compete with pension and provident funds arrangements and voluntary retirement annuities for contribution allocations to Pillar 3. Both occupational funds and voluntary retirement annuities are subject to a common regulatory and tax regime. The important features of the current system in South Africa, are that occupational funds linked to employers are primarily defined benefit in nature in the public sector and defined contribution in nature in the private sector. In respect of existing defined benefit funds, these are funded and independently administered. It is noted that replacement rates in the retirement industry are considered too low to provide adequate income replacement at retirement, thereby reducing retirees' standard of living with the possibility of falling into poverty. The lack of compulsory preservation is seen as a key driver behind inadequate replacement ratios. It is noted that this analysis excludes alternative retirement saving mechanisms such as property and discretionary savings.

5.3. Pillar 3

In the last decade the pension industry has grown significantly in South Africa. As per the FSCA Annual Report 2017, the total size of the assets held in the pension industry has increased from R 1 128 billion in 2008 to R 4 262 billion in 2017. The number of active members increased from 8 824 386 in 2008 to 11 245 322 in 2017, representing a 27.4% increase over this period. This is largely a result of the commencement of the inclusion of statutory funds such as the Government Employees Pension Fund (GEPF) in the FSCA annual reporting. Excluding underwritten funds, the number of active members increased from 5 826 901 in 2008 to 7 641 458 in 2017, representing a 31.1% increase over this period. It is noted that there is likely some double counting as some active members belong to more than one retirement fund.

During the same period, there was a 14.7% increase in the South African population and a 10.9% increase in the total number of employed people. This suggests that population and/or employment growth during the period were not the main drivers for the increase in the number of members in the pension industry, indicating that it is possible that more employed individuals accessed retirement savings and/or more employed individuals held two or more retirement savings products.

The total number of retirement funds dropped significantly from 11 701 in 2008 to 5 158 in 2017. This was due to the cancellation of mainly underwritten funds and a few privately administered funds in 2012; the majority of these funds were small with assets below R20 million which had ceased to operate, transferred to umbrella funds, or had not informed the Registrar they were terminating. This is in line with the stated objective of the FSCA which is to reduce the number of funds.

As per StatsSA Quarterly Labour Force Survey (QLFS), as a percentage of the total employed population, there has been a decrease in the proportion of formal employees without a retirement fund from 53.2% in 2008 to 49.8% in 2019. In 2019, the proportion of men and women without a retirement fund who were employed was 48.3% and 51.7%, respectively. This has decreased for males and increased for females when compared to 2008 statistics where the male and female percentages were 54.3% and 45.7%, respectively.

2.2. Impact: Existing Retirement Funds

The NSSF can be expected to significantly impact existing retirement funds as follows:

- Occupational and voluntary funds may suffer a significant loss of membership given the loss of the contributions redirected towards the NSSF;
- Occupational and voluntary funds will compete for an individual's retirement savings above the NSSF contribution level and on earnings above the NSSF earnings ceiling;
- Smaller schemes will experience larger per unit cost and therefore may form umbrella funds (multi-employer funds) to reduce costs;
- Existing pension and provident funds will need to adapt their contribution and benefit structures to take account of the new mandatory social security arrangement; and
- Current schemes will be assessed with respect to contributions and benefits and schemes that do not meet the required standards will be forced to close and members transferred to the NSSF.

The new environment will be particularly challenging for voluntary funds that target lower-income employees, who may find further contributions above the mandatory NSSF contributions challenging, or those with contribution rates that are not significantly above the mandatory level as set out below.

Research undertaken on behalf of the National Treasury by Jacques Malan Consultants and Actuaries (JMCA, 2011) investigated the impact of the proposed framework of the NSSF on bargaining councils and trade union funds. This research was presented in the paper: "Evaluation of the Impact of the Establishment of the National Social Security Fund and the Design of Benefits on Bargaining Council and Trade Union Funds".

The impact of the new framework for the NSSF was as follows at the time of the research (2011):

- The 1.4 million membership of the considered funds is to be distributed as follows:
  - 2% no longer participate in any fund;
  - 80% only participate in the NSSF; and
  - 18% participate in the NSSF and a top-up fund.

- The total contributions of R 8 billion per annum in 2012/2013 will be distributed as follows:
  - 17% will be lost due to reduced contributions at low income levels;
  - 67% will flow into the NSSF; and
  - 16% will flow into top-up funds.

Therefore, if the considered funds become "accredited top-up funds", they could retain around 250 000 members of the 1.4 million membership and R1.3 billion per annum in contributions of the R 8 billion per annum. Some funds are expected to close, while those that remain open will experience higher operating costs per member.

2.3. Impact: Adequacy

Fultz and Hirose (2019) researched the reforms enacted in Central and Eastern Europe from 1998 to 2007. The majority of the reforms were in favour of mandating employees to save for retirement in privately-managed individual accounts, while public systems played a limited role. They found that in many instances, pensioners had failed to adequately plan for retirement and thus required government to step in and provide full public pensions.

In 2008, Chilé introduced comprehensive pension reform through the New Solidarity Pillar (NSP). This is akin to South Africa's Pillar 1 which comprises the Old Age Grant. The NSP intended to prevent poverty amongst retirees who had saved insufficiently throughout their careers. This Pillar introduced a guaranteed basic pension to the poorest 60% of the population, irrespective of their historical pension contributions. The NSP programme provides old-age and disability subsidies financed by general revenues. Research on household behaviour showed an improvement in household welfare as a result of a number of factors: higher expenditure on basic consumption including health care (e.g. an increase of US$13 in annual expenditures on food and US$16 on medicine), improved leisure time resulting from reduced hours worked (a reduction of 1.6 hours per week) and enriched self-reported health. (Behrman *et al*. (2011) cited in Fajnzylber (2019).

In a study on pension reform from 1994 to 2017, Geri *et al*. (2019) found that although coverage increased, inequity increased with individual capitalisation from 1994 amongst both among the economically active and inactive population. While coverage for the economically active did not improve significantly with the return of a PAYG system, which was re-established in 2008 following a 14-year period of individual capitalisation, this was found to be as a result of the pro-educated bias among the economically active population.

The Estonia experience presents an example of reform that resembles the intended reform in South Africa. Vork and Piirits (2019) describe the shift in Estonia away from a defined benefit scheme to a multi-Pillared one with a PAYG element, as well as contribution-based insurance and a funded pension scheme. The results found that in an economic climate of high inequality of earnings, high long-term and structural unemployment rates (such as South Africa), the introduction of a link between contributions and future benefits raised income inequality. It is noted that the NSSF will be a career-indexed pension plan hence there will be an explicit link between earnings, contributions and benefits.

The overview of these examples of pension reform suggest that public pension systems provide better adequacy in the provision of pension benefits where there is no link between contributions and future benefits, particularly for low-income earners, resulting from cross subsidy that arises between high-income and low-income earners. The opposite is true where there is a link between benefits and contributions, with high-income earners achieving better adequacy. This is a particularly relevant for South Africa given our high inequality of earnings, high long-term and structural unemployment rates. The experience in South with respect private arrangements (occupational funds and voluntary retirement annuities) resulting in low coverage in relation to the full working age population and low replacement rates is in line with international experience. Therefore, the introduction of the NSSF will increase coverage and adequacy of retirement benefits for all formal employees through compulsory preservation.

2.4. Impact: Coverage

Auto-enrolment will be introduced in Pillar 3 of the revised South African retirement funding system. This entails employees automatically 'opting-in' to the system, which would then create an estimated pool the size of the formally employed sector in Pillar 3. The potential impact of this in South Africa is still unknown. As Hanekom stated[51], "*If the Government were to introduce auto-enrolment, how would the lower end of the market be served? As was the case in the UK, the small end of the market cannot be served cost effectively by the current providers in terms of current legislation. We therefore also have market failure in this sector and will have to establish a special fund. Thus far, every indication has been that such a fund will be a state-controlled fund.*"

In the United Kingdom, auto-enrolment into the National Employment Savings Trust was introduced in 2012 to improve retirement savings as a result of employers not having their own pension schemes. This was particular evident for low-income employees. The state therefore established a fund that could provide a pension offering at an affordable fee for low-income employees. Cribb and Emmerson (2019) found that employers who were obliged to implement automatic enrolment in the United Kingdom led to large increases in the pension participation rates

[51] https://www.fanews.co.za/article/company-news-results/1/sanlam/1055/pension-fund-auto-enrolment-how-will-it-affect-us-in-south-africa/20803

(a 36% increase) and in the total contributions to workplace pensions (a 1.05% increase in contribution rates). They found that the main reason for the increase in contribution rates was employers enrolling their employees into pension schemes with employer contributions well above the minimum contributions mandated by the government. The effect on pension saving was consequently increased due to the substantial spill-over effects of the policy. They further found that the pension participation rates of employees who were not obliged to be automatically enrolled increased by 18% on average, thereby more than doubling the pension participation rate among this group.

Peksevim and Akgiray (2019), in a comparison of pension systems in selected Organisation for Economic Co-operation Development (OECD) countries (Sweden, the Netherlands, Australia, Chile, Mexico, the United Kingdom, New Zealand and Italy) found the following:

- Mandatory private pension arrangements have the highest coverage rates compared to automatic enrolment and voluntary pension systems.
- In all countries, which apply compulsory pension arrangements, the coverage rates are above 70% (except in Mexico), whereas in the countries that formed part of the study who adopted automatic enrolment systems, the coverage rates range from 20% to 75%.
- The lowest pension plan participation rates is most evident in voluntary pension systems among the OECD countries considered.

This comparison was undertaken to inform policy considerations for the Turkish pension system. It was found that low coverage resulting (32.5%) from auto-enrolment had arisen largely due to the unaffordability of contribution.

With respect to automatic enrolment systems, coverage rates do increase, although the impact of such does vary. The experience of Turkey may likely apply at the lower- and middle-income earners level in South Africa.

2.5. Impact: Labour Market

According to National Treasury (2004), "*South Africa has a high rate of unemployment, a large informal sector, and many working-age individuals who have period of unemployment scattered throughout their working lives*". Under the current proposed system, pension contributions would be defined by formal employment. The primary risk is that employees may be disincentivised from seeking formal employment as this would result in a higher income bracket resulting in the introduction of, or increase to, their contributions to the NSSF, which would result in a reduction in net income. It is proposed that government will subsidise the contributions of low-income employees to minimise disruptions to the demand of supply of labour associated with the introduction of mandatory contributions. However, it is expected that some disruption will occur at the ceiling at which the subsidisation of contributions will cease. This could be mitigated to an extent by a scaling down the level of subsidisation over a pre-defined earnings range. Based on the analysis set out in Section 4.1.3, individuals covered in respect of retirement savings, contribute at a minimum of 11% of earnings across genders on an age group and earnings group basis. Therefore, disruption will occur at NSSF contribution rates of 12% and 15% and for those who are not covered in respect of retirement savings, ranging from approximately 80% at the NSSF earnings floor to 20% at the NSSF earnings ceiling.

As per Fajnzylber (2019), as a result of the NSP introduced in Chilé, research on household behaviour showed an improvement in household welfare as a result of improved leisure time resulting from reduced hours worked (a reduction of 1.6 hours per week). As a result of the reduced hours, labour market participation rates fell (Behrman *et al*. (2011)). Wong (2016), cited in Fajnzylber (2019), analysed the shift in the labour market between the formal and uncovered sector by exploiting the differential impact of the Chilean pension system reform on the relative attractiveness of formal and uncovered sector jobs for different subgroups of the population. The first sub-group included those individuals who expected an increase in their marginal tax rate on pension contributions due to existing pension rights at reform while the second sub-group included individuals who faced a drop in their implicit marginal tax rate due to no pension rights at reform. Results show that the first subgroup is, on average, about 2.9% less likely to work in the formal sector after the reform and that the second subgroup is found to be about 8% more likely to work in the formal sector after the reform. Fajnzylber (2019) concluded that the empirical results of Chile are consistent with theoretical predictions in terms of labour market behaviour, but the estimated impacts are relatively small. However, this may not be the case with South Africa given our structural high unemployment.

2.6. Impact: Consumer Behaviour

The overall impact of consumer behaviour specifically relating to consumption, savings, investment and insurance, depends on the balance of the different responses by different groups of employees to these different components.

Given the introduction of mandatory contributions to the NSSF, consumers might respond by reducing their savings (defined as Pillar 3 savings) so that the overall value of the contributions is at a level which has little effect on capital accumulation. The extent of the reduction of their Pillar 3 savings will be limited to some extent by the quasi-mandatory nature of Pillar 3 savings, the response of employers in relation to integration of the NSSF into occupational scheme design and the resulting coverage rates that arise. It is noted that with respect to bargaining council funds, the decision-making processes in collective bargaining will not necessarily reflect consumer choice considerations.

With respect to voluntary retirement annuities, individuals are fully in control of their retirement savings levels hence this form of Pillar 3 savings will be fully impacted upon by consumer behaviour. These individuals are most likely to be high-income earners.

Shifting contributions from occupational funds to the NSSF may lead employees, where this is made possible by employers closing occupational funds or flexibility in contribution rates to occupational funds, to save less, the resulting impact on Pillar 3 savings and insurance pool (and hence, capital accumulation) could be negative if the reduction in voluntary savings is greater than mandatory contributions to the NSSF. On the other hand, employees may be required to continue to Pillar 3 saving at levels prior to the implementation of the NSSF, so that capital accumulation increases. Indeed, employees who are not covered with respect to retirement savings and have borrowing ability may sustain their zero private savings in the face of accounts financed by additional mandatory contributions. Therefore, the impact on savings be anything from negative to largely positive depending on the ability of employees to implement desired behaviour which will depend on whether retirement savings occurs through voluntary retirement annuities or occupational funds and the resulting impact of the NSSF on occupational funds.

Consumer behaviour will also depend on any potential changes to the tax treatment of Pillar 3 savings and the tax treatment of NSSF contributions. Any differential tax treatment will impact on the relative attractiveness of contributions to NSSF versus Pillar 3 savings. For example, if contributions to the NSSF receive relatively better tax treatment, this will increase in the relative attractiveness of contributions to the NSSF compared to retirement savings. This may result in the diversion of contributions to retirement savings to the NSSF through supplementary contributions. This may be limited in line with the discussion above.

Various studies have measured the net effect of the change in private savings following the introduction of mandatory contributions to social security. An example of such a study was conducted by Lehmann-Hasemeyer and Streb (2017). Their investigation was based on a regression analysis of the German social security system of the 19th century. The authors analysed savings through bank deposits at a county (provincial) level and found that crowding out of private savings did in fact occur. It was also suggested that the crowding out of savings was linked to the confidence in the social security system (or lack thereof), which is often correlated with the length of existence of these systems. It is noted that there are risks to using data as old as this, as savings behaviour changes across generations (Koloba, 2018).

The impact on retirement savings depends on the relative rate of crowding out which dictates whether forcing saving on households through a NSSF reduces the absolute amount of overall savings that will take place. Alessie, Angelini and Santed (2013) provide a recent examination of this effect. Using survey data on job and wage histories of respondents known as the SHARELIFE (Survey of Health, Ageing and Retirement in Europe) in 13 European countries, the authors implemented a lifecycle regression model to understand the displacement effect. They found that a €1 increase in pension wealth is associated with a 47% decline in private wealth or savings, although it is noted that full displacement may be achieved using other types of econometric modelling. However, the authors highlight that caution must be exercised when gathering pension fund data. Gale (1998) stated that "*pension wealth data are of generally poor quality; all methods of calculating pension wealth in defined benefit plans are likely to create measurement error*".

Vaillancourt *et al*. (2015) studied the experience in Canada in relation to the expansion of the compulsory government pensions system. The research was carried out within the context of the proposed expansion of the Canada Pension Plan. The evidence from 1986 to 2008 found that increases in compulsory pension contributions were followed by decreases in the rate of private savings among households. Further, they found a 1% increase in

the rate of compulsory contribution resulted in a 0.895% fall in the private savings rate. This suggests a net positive effect – households did not totally offset their reduction in private saving, thereby increasing overall saving.

Attanasio, Meghir, and Otero (2011), cited in Fajnzylber (2019), estimated the impact of the Chile pension reform on the relationship between pension wealth/accrual rate. It is estimated that the reform increased self-financed pension wealth as well as the resulting final pension at retirement. They also concluded that the pension improvement for women was higher than that of men, significantly reducing gender inequalities.

The changes in retirement savings will likely be dependent on the age, wealth and education level of the consumer and on the suitability of the NSSF as a substitute for the current retirement system. If it is a good substitute (i.e. benefits for NSSF are equal to the benefits of the current retirement system for the same contribution rate), then the implementation of the NSSF is expected to not have a substantial impact on savings. If it is not a good substitute, which may be the case for the NSSF due to the inclusivity of the income protection benefit to contributors of the fund implying cross-subsidies by and across contributors, then the implementation of the NSSF could be expected to have an impact on household consumer savings and investment behaviour. This however will be limited to some extent by the quasi-mandatory nature of Pillar 3 savings, the response of employers in relation to integration of the NSSF into occupational scheme design and the resulting coverage rates that arise

This is demonstrated by Lachowska and Myck (2015). The change in pension wealth introduced by Poland's 1999 pension reform was studied to estimate the effect public pensions have on household saving. The impact of the pension's reform was to decrease the value of public pensions. They found that public pensions crowd out private saving by 0.24% for each 1% contribution to public pensions. For middle-aged cohorts, the crowding out of private saving was equal to 0.54% for each 1% contribution to public pensions. The crowding-out effect of private savings for younger cohorts equalled to 0.30% for 1% contribution to public pensions. When the analysis included age and level of education of households, it was noted that this effect was strongest for highly educated households and older households – up to complete crowding out. For these groups of households, they found that public pension and private saving were close to perfect substitutes. For the young and less-educated cohorts, the crowd-out was less than one-for-one. The reasons for this was attributed to information asymmetry and the level of financial literacy.

Kang and Lim (2006) estimated the effect of the public pension system on private savings in Korea and whether this was affected by disposable income (represented by household balance sheets). Various types of household status were analysed over a five-year period, including households with a consistent balance sheet surplus and households with a consistent balance sheet deficit and households with a combination of a surplus or deficit on their balance sheets over the period considered. They concluded that the crowding-out effect in constant surplus households is larger than in constant deficit households. In addition, households with a surplus or deficit showed a lot bigger crowding-out effect than do either of the former two cases. This means that those whose income earnings are unstable decrease their current savings and then expend them, implying that the magnitude of the crowding-out effect depends on the stability of income.

2.7. Impact: Economic Growth

Under the proposed NSSF model, mandatory saving will be split into a Pay-As-You-Go (PAYG) element and accumulation of contributions element to meet future requirements. This is in order to ensure a minimum level of protection immediately for all participants. It is proposed that the NSSF be subject to a 5% minimum long-term reserve requirement. While the proposed design suggests that the stock of savings and hence investment may decline initially as the PAYG system is used to fund immediate benefit payments, the NSSF will be mandatory and would include additional participants not currently covered in the retirement industry, therefore allowing for the possibility of increasing contributions relative to current contributions to retirement savings (up to the NSSF earnings ceiling). In practice, this will depend on the relative value of contributions versus actual benefits.

Feldstein (1981) was one of the first to comment on the impact of the introduction of a PAYG system. He found that introducing a PAYG system raised aggregate consumption and discouraged private saving. There is limited research on the impact on investment of moving toward an unfunded social security system, such as the PAYG described in the NSSF. Much of the literature, such as Pogue and Scontz (1977) finds that social security may reduce the level of overall saving. Barr and Diamond (2002) review behavioural aspects of the link between contributions and savings from an economic theory perspective. They discuss the conditions for when funding increases savings. They highlight that funding does not increase saving if the mandatory pension saving is offset by a decline in saving of voluntary pensions. They further conclude that the relationships do not always hold, and

must be examined on a case-by-case basis. To form an opinion in the South African context, this relationship would first need to be tested empirically, and compared internationally to find countries with similar experiences.

From a developing policy perspective, Aggarwal *et al* (2006) investigated a movement away from an unfunded PAYG system in countries such as Venezuela, Bulgaria and Argentina. The results suggested that countries that implemented a defined-contribution reform did not have significantly higher savings rates after the reform. However, critically, they find that the cross-sectional analysis of a panel of countries exhibited lower savings when a PAYG system implemented. Further, Ortiz *et al* (2018) conclude that 60% of countries that had reversed the privatisation of public mandatory pensions due to the evidence of accumulated evidence of negative social and economic impacts such as increased gender and income inequality, increased fiscal pressures and higher administration and other costs.

When analysing the impact of savings on investment through the introduction of a social security system it is important to understand the links between aggregate saving and economic growth. Sothan (2014)5 linked savings to growth and investment, stating that higher savings result in higher capital accumulation and increased investment and, thus, increased economic growth. Conversely it has been noted that low savings result in lower capital accumulation and lower investment and, thus, in lower economic growth, ultimately exacerbating unemployment (StatsSA, 2013; National Planning Commission, 2011; National Treasury, 2016a; 2016b).

Increased investment leads to increased fixed capital formation, and the deepening of capital markets. Bijlsma *et al*. (2018) identify two factors that affect the economic landscape. The first is that pension savings may lead to deeper and more efficient capital markets by increasing the level of funds available to capital markets. This is backed by research from Wurgler (2000), which states that combining an increase in the pool of savings with efficient capital markets increases investment domestically. Secondly, higher levels of pension saving may affect the financial system in favour of institutional investors. These investors traditionally adopt a long-term maturity view, which has been found to improve governance and firm efficiency. Vittas (1996) corroborates this effect, as the experience of Chile showed that funded pension schemes lead to a significant impact in capital market development as a result of long-run financial savings. Vittas also suggests that the resilience of Chile's financial system played a role in buffering the system against the volatility of emerging markets during 1995. It is noted that South Africa already has deep capital markets, thereby implying that further development of its market is minimal as suggested by the above research.

Davis and Hu (2008) investigate the link between pension assets and economic growth over 38 OECD and emerging market economies over a 40-year period from 1960 to 2002. Their results suggest a positive relationship between pension assets and economic growth, with a consistently larger growth impact for emerging market economies. They also find that South Africa could expect a 0.14% increase in economic growth as a result of a 1% increase in pension assets. However, the results are not necessarily conclusive on this matter, as Zandberg and Spierijk (2010) found no correlation between funding of pensions and economic growth in both an OECD and non-OECD sample for the period 2001 to 2008. The authors explain the three potential benefits of a higher degree of a funded pension system as: capital market development through a higher pool of savings; a higher aggregate savings rate; and the reduction in labour market distortions as funded pension systems allocate labour more efficiently towards labour supply decisions than unfunded systems. However, controlling for capital market returns of pension funds and demographic factors (size of ageing population), they found no evidence of a relationship between pre-funded pensions and economic growth.

Bijlsma *et al*. (2018) attempted to clarify these contradictory conclusions. They elaborate on the positive correlation between a stronger pension system and faster economic growth through the deepening of capital markets, which in turn stimulates growth. However, they make a number of clarifying warnings on attempting to study this direct linkage. Cross-country models typically suffer from endogeneity and causality problems that blur the relationship. Instead, the authors use industry or firm dependence on external finance as the linkage with deepening capital markets to justify accelerated economic growth. They find that increasing pension funds as a fraction of GDP by 40% could increase growth for the sector by approximately 0.24%.

2.8. Impact: Cost of Capital

The literature on consumer behaviour set out above has illustrated that introducing a mandatory social security system may result in partial or total crowding out of private savings, or may increase overall savings. Furthermore, under the proposed NSSF model, the introduction of a PAYG element may decrease the overall level of savings compared to the current system. It also creates an implicit national debt to future generations. The net impact will be an increase or decrease in savings and consequently capital accumulations, which according to supply and

demand relationships as per traditional economic theory, results in an increase or decrease in the cost of capital. Transition arrangements with respect to the NSSF can be structured so that the overall level of savings increases. However, increased saving results in lower consumption. Household consumption is the single largest contributor to South Africa's GDP on the expenditure side.[52] Therefore any requirement to contribute to the NSSF, particularly for those individuals who do not contribute to retirement savings, may reduce aggregate demand and economic activity. Over the long term, however, if a higher saving rate materialises, as in line with economic theory this will generally lead to higher levels of economic output through the provision of funding to businesses for investment. The overall level of investment in an economy is one of the primary determinants of long-term economic growth.

Dadam and Viegi (2018) suggest that increased supply of savings reduces the cost of capital and promotes investment.[53] The authors attribute the rapid economic growth period of 1965 to 1990 in East Asian countries as a result of forced saving that brought down the cost of capital. It is important to differentiate here, however, that forced saving in the East Asian example is regarded as increasing the pool of funds that could be used for productive investing. This was combined with capital controls, which kept interest rates low and forced domestic capital to remain within the economic system, which resulted in rapid growth in the sectors of agricultural, manufacturing and services industries. It was found that a lot of the success of the East Asian "miracle" was a combination of extensive intervention in financial markets, as well as efficient allocation of capital within the economy (Stiglitz, 1996).

In an open and small economy such as South Africa, free capital flows can lead to significant capital outflows from the economy. However, this is limited in respect of retirement savings whereby Regulation 28 limits the extent to which these funds can be invested offshore. This depresses the multiplier impact of accumulated savings in the economy. Lower levels of savings will lead to slower capital accumulation. As a result, investment declines and GDP growth is potentially slower. Despite this, free capital flows are also a positive enabler for growth. A deep and fluid financial system holds attraction to foreign investors. Efficient systems create trust and are able to weather financial or economic crises more smoothly than inefficient systems. The ultimate outcome of this is that raising capital is easier, and the cost of capital is lower.

As cited by Moleko (2019), Walker and Lefort (2002) investigated pension fund reform and its impact on capital market development in emerging market economies. The results show that pension funds reduce the cost of capital. Walker and Lefort (2002) and Hu (2012) argue that the long-term investments required by pension fund managers lowers the liquidity premium. This, combined with the long-term outlook of pension funds, lowers the equity risk premium, all leading to a reduction in the average cost of capital.

Further distinctions must be made with regards to the impact of savings on the cost of capital in respect to the ability to invest locally or in foreign assets. Feldstein and Bacchetta (1989) suggest that adding domestic saving to a world pool of investment might negate any relationship between domestic savings and domestic investment. Damdam and Viegi (2018) concur with this, stating that "South African firms do not have a problem of financing investment: they just don't want to invest at home." The RCS Report for 2019 shows outbound investment may be four times higher than foreign inflows. Furthermore, the demand for domestic investment assets remained depressed since 2016. Therefore, differentiation must be made in the modelling as to the demand for domestic versus foreign assets.

Therefore, given the links between increased savings and the cost of capital, a resulting decrease in aggregate saving may increase the cost of capital. However, decreases in domestic savings however may crowd-in foreign savings if there is sufficient demand for South African assets.

There may also be differing impact on the cost of capital for the private and public sector. This will depend on the investment strategy of the NSSF and how this impacts the supply of savings for investment in the various asset classes underlying the NSSF and accumulated retirement savings. Investments under the NSSF may favour debt markets and public sector funding resulting in reduced level of investment for other asset classes even where the overall level of savings after implementation is expected to increase. This may increase the cost of capital for the private sector or increase the cost of equity compared to debt. Increases to the cost of capital for private sector will reduce the demand for investment or change the relative attractiveness of equity versus debt.

Furthermore, the impact on the State's ability to fund new business and infrastructure development will depend on the investment strategy of the NSSF. If the investment strategy is in line with Regulation 28, it would mean that the members' contributions are invested in the various asset classes in roughly the same proportion underlying

[52] https://www.idc.co.za/wp-content/uploads/2019/07/IDC-RI-publication-Economic-Overview-external-21-June-2019.pdf
[53] https://hsf.org.za/publications/focus/focus-82-the-economy/4-viegi-and-dadam.pdf

retirement savings. The only change would be the financial intermediary facilitating those investments assuming no change to the level of savings. However, if investments under the NSSF favour debt markets and public sector funding, this may be used to fund new business and infrastructure development.

3. ASSESSMENT OF THE POTENTIAL IMPACT OF A NATIONAL SOCIAL SECURITY FUND

Institutional sectors in the South African economy (household, general government, foreign sector, financial intermediaries and corporate business enterprises) with surplus funds seek appropriate investments, while those with deficit positions require suitable funding.

Retirement and discretionary savings by households provide a source of funds to financial intermediaries including collective investment schemes, life insurers and retirement funds who channel funds to other institutional sectors in need of funding through various financial assets, such as loans, shares and fixed-interest securities. The flow of funds through financial intermediaries therefore plays a pivotal part of providing funding to other institutional sectors in need of funding through various financial assets. These inter-sectoral flows of funds are reflected in South Africa's National Financial Accounts.

With respect to 2019, South Africa's National Financial Accounts show that the foreign sector's net lending position was R153 billion which mirrored a domestic shortfall of the same amount. The general government sector recorded an all-time high net borrowing position of R248 billion. General government sourced funding from financial intermediaries, non-financial business enterprises and the foreign sector to finance this shortfall.

Financial intermediaries include banks, insurers, retirement funds and the Public Investment Corporation, which invests assets on behalf of public sector funds such as the Government Employees Pension Fund. These financial intermediaries increased their holdings of government bonds by R 102 billion.

Households had sourced R163 billion from non-financial business enterprises and, in turn, financial intermediaries obtained funds of R150 billion from households, reflecting a net borrowing position of R10 billion. This is line with trends with respect to household savings in South Africa with household savings rates being close to zero. Private non-financial business enterprises accounted for the largest proportion of gross saving in 2019 (56.2%).

3.1. Methodology and Assumptions

In order to assess the potential impact of the NSSF in South Africa, the flow of funds in relation to retirement savings and the investment thereof in South Africa was projected as follows:

- Net inflow of funds to retirement savings made by or on behalf of individuals
- Accumulation of retirement savings held by financial intermediaries.

This was done on two bases, namely Applying the Status Quo whereby no NSSF is introduced and Implementing the NSSF.

3.1.1. Methodology

3.1.1.1. Applying the Status Quo

Under Applying the Status Quo, contributions to retirement savings, including risk benefits, by the formally employed were modelled based on a gender, age and earnings group basis using effective contribution rates (contributions to retirement savings as a percentage of earnings) to approved retirement funds calculated from

Individual Panel and IRP5 data for the tax years 2017 and 2018.[54] By definition, these effective contribution rates include premiums for approved risk benefits and administration expenses. This approach assumes an average contribution rate for each gender, age and earnings group.

[54] Earnings have been defined in line with Kerr (2020) as the sum of source codes 3601, 3605, 3606, 3607, 3615, 3616, 3703, 3707, 3717, 3718, 3801, 3802, 3808, 3810, 3813, 3814, 3815, 3816, 3820 and 3821. Contributions to retirement savings have been taken as the sum of source codes 4001, 4003, 4006 and 4472.

These were projected forward by linking the number of contributors to formal employment estimates, allowing for proportion of those in formal employment deemed to contribute to or have contributions made on behalf of them to retirement savings over the projection period in line with assumed earnings inflation. Contributions were limited to the maximum contribution limit set by SARS that attracts tax relief from 2020.

It is noted that contributions to retirement annuities made in an individual's personal capacity are not reflected in IRP 5 data. The following table sets out total contributions to retirement savings as per IRP 5 data for tax years 2017 and 218 compared to reported contributions by the FSCA for 2016 and 2017:

Table 2: Comparison of Total Contributions to Retirement Savings as per IRP5 data and FSCA Annual Reports

	2017 Tax Year/2018 Calendar Year(R'million)	2018 Tax Year/2018 Calendar Year(R'million)
IRP5 Data: Total Contributions to Retirement Savings	228 695	239 602
FSCA Annual Reports: Total Contributions to Retirement Savings	205 794	215 297
Difference	22 901	24 305
% Difference	10%	10%

The difference of approximately 10% over period considered is attributed to retirement annuities made in an individual's personal capacity. It is noted that this may also be the result of the calculation of deemed per person contributions in relation to the Government Employees Pension Fund. The IRP5 data is therefore considered representative of contribution flows to occupational funds as well as employer related retirement annuities given that all employers must issue an IRP5 for employees unless they earn less than R 2 000 per annum. Appropriate allowance has been made for the impact of these contributions in projections assuming contributions in line with the effective contribution rates calculated above. It is noted that in respect of defined benefit members, contributions recorded in IRP5 data are deemed contributions and hence not necessarily actual contributions.

Retirement savings were accumulated as follows:

- Projected contributions to retirement savings as described above.
- Benefit payments covering payments on death, disability, resignation, retirement, retrenchment and termination from retirement savings were projected based on expected changes in formal employment estimates allowing for proportion of those in formal employment deemed to contribute to or have contributions made on behalf of them to retirement savings.
- Administration and other expenses (including reinsurance premiums) were projected forward by calculating a percentage of pensionable earnings based on historical data (2016 to 2019) and projecting this forward based on the projected pensionable earnings as described above.
- Investment return was estimated by applying expected returns to the various asset classes held by retirement funds with asset classes being based on the split of asset classes being held by retirement funds as at 31 December 2019. Allowance has been made for investment management fees by calculating these fees as a percentage of retirement savings assets based on historical data (2016 to 2019) and projecting the reduction in investment return by applying this percentage to retirement savings assets.

3.1.1.2. Implementing the NSSF

Under Implementing the NSSF (Pillar 2), retirement savings were projected as follows:

- Contributions to the NSSF were modelled on an age group and earnings category basis, based the number of individuals in formal employment and their earnings as per IRP5 data for the tax year 2017 and 2018. Effective contribution rates in each category were calculated by allowing for contributions to the NSSF up to an earnings ceiling (R 276 000 in 2018 terms). Contributions were projected by allowing for the estimated number of individuals in formal employment earning above the earnings floor (R 20 000 in 2018 terms) over the projection period, applying the NSSF effective contribution rates and projecting earnings in line with

assumed earnings inflation. It is noted that in the first year of implementation, formally employed individuals within one year of retirement are assumed not to join the NSSF.

- Contributions to retirement savings were modelled as under Applying the Status Quo and deducting NSSF contributions to those in formal employment who are were contributing to retirement savings under this scenario. A number of scenarios were considered as to how these net contributions may change due to changed savings behaviour as well as how retirement funds may be affected as discussed in Section **3.1** above. Administration and other expenses (including reinsurance premiums) were projected forward under Implementing the NSSF through the impact on pensionable earnings as per the methodology for accumulating retirement savings.

The following is noted with respect to Implementing the NSSF (Pillar 2):

- All formally employees will join the NSSF subject to earning above the NSSF earnings floor. This includes both private and public sector employees.
- All accrued retirement savings rights will not be affected by the NSSF transition, that is, they will remain within Pillar 3.

Various scenarios were considered with respect to contribution rates to the NSSF, namely 10%, 12% and 15% of earnings up to the earnings ceiling for those formally employed individuals' earnings more than the NSSF earnings floor. Given the concerns regarding the sustainability of the NSSF allowing for risk benefits, the impact of segregating funding for retirement benefits in the NSSF, allowing for a 6% contribution rate, is considered. A separate 4% contribution rate is assumed to cover risk benefits, the accumulation of which has not been allowed for the various projections. Alternatives have been considered in relation to the NSSF earnings ceiling to which the contribution rates apply. Currently, the NSSF earnings ceiling is proposed to be R 276 000 in 2018 terms. As an alternative, a NSSF earnings ceiling equal to the current UIF earnings limit has been modelled (currently R178 464 per annum).

The scenarios considered allow for how contributions to retirement savings, for those covered by retirement savings at implementation of the NSSF, above the contribution level required by the NSSF may change. If the consumer considers it is a good substitute (i.e. benefits for NSSF are equal to the benefits of the current retirement system for the same contribution rate), then the implementation of the NSSF is expected to not have a substantial impact on savings and vice versa. Research suggests that partial crowding out, if allowed, should be expected as was the case in Canada, Poland and Korea as discussed in Section **2.6**. Full crowding out may occur at older ages and higher education levels if benefits are viewed as a perfect substitute. It is evident that the response may vary across the formally employed population, with the total response across this population dictating the extent of the crowding out. The extent of the reduction of their Pillar 3 savings will be limited to some extent by the quasi-mandatory nature of Pillar 3 savings, the response of employers in relation to integration of the NSSF into occupational scheme design and the resulting coverage rates that arise

It is noted that crowding out may also occur if employers alter the design of their retirement funds to align to the design of the NSSF. For example, it can be considered likely that employers will reduce contribution rates where these are higher than those to the NSSF.

The following scenarios have therefore been allowed for:

- **Full Crowding Out Scenario**: This allows for the full displacement of retirement savings of those formally employed individuals currently covered in respect of retirement savings of contributions of 10%, 12% or 15% of earnings up to the NSSF earnings ceiling.
- **Contribution Alignment Scenario**: This allows for the alignment of contribution rates under Pillar 3 for occupational funds and voluntary retirement annuities to the NSSF contribution rate (10%, 12% or 15% of earnings).
- **Partial Crowding Out Scenario**: This allows for the partial displacement of retirement savings of those formally employed individuals currently covered in respect of retirement savings of contributions of 10%, 12% or 15% of earnings up to the NSSF earnings ceiling. Covered individuals are expected to allow for a partial crowding of 50% of contributions to the NSSF at higher income levels with full crowding-out at lower income levels (below the NSSF earnings limit).

It is noted that with respect to the event of no crowding out the accumulation of retirement savings is equal to that under the Applying the Status Quo. This is considered a theoretical outcome given that no crowding out will not be possible for low-income earners.

The impact of the informally employed participating in the NSSF has been considered. Those individuals in the informal sector, earning above the SARS tax threshold (R83 100 in the 2020/21 tax year), have been identified as possible participating the NSSF. Data as per StatsSA General Household Survey 2018 has been used to determine the proportion of the informally employed that earn in excess of the SARS tax threshold for modelling purposes.

The NSSF will compete with current retirement funds on supplementary contributions above the mandatory contributions, up to the NSSF earnings ceiling, by encouraging consumers to allocate these supplementary contributions to the NSSF Supplementary Fund through tax and other incentives. For purposes of this comparison, the scenarios considered only allow for the impact of consumer behaviour for those currently covered in respect of retirement savings and assuming they will not shift their contributions in excess of the mandatory NSSF contributions of earnings up to the NSSF earnings ceiling to the NSSF. Further, informally employed individuals have not been included in the analysis.

As discussed, approximately half of the formally employed population are currently not covered. Further contributions to the NSSF Supplementary Fund may arise if these individuals, particularly those who earn above the NSSF earnings ceiling, opt to contribute to the NSSF Supplementary Fund on earnings above the NSSF earnings ceiling. Various scenarios are presented in this respect allowing for participation rates of 30%, 65% and 100% for individuals earning above the NSSF earnings ceiling who are not covered in respect of retirement savings at Implementation of the NSSF. This in line with research set out in Section **2.4** which indicates a range of coverage outcomes. Based on the experience in Turkey, this implies a minimum participation rate of approximately 30%.

The following table illustrates the flow of contributions for an individual's earnings above the NSSF earnings floor, who are covered in respect of retirement savings or not covered in respect of retirement savings (15% NSSF contribution rate):

Table 3: Comparison of Flow of Contributions for Individuals Earnings above the NSSF Earnings Floor who are Covered/Not Covered In Respect of Retirement Savings

	Earnings level	NSSF Contributions	NSSF Supplementary Contributions	Contributions to Occupational Funds and Retirement Annuities
Not Covered in Respect of Retirement Savings	0 - NSSF Earnings Ceiling	15%	0%	Not covered
	> NSSF Earnings Ceiling	0%	15%	
Covered in Respect of Retirement Savings	0 - NSSF Earnings Ceiling	15%	Covered	Full Crowding Out: Effective contribution rate multiplied by earnings less NSSF Contributions Partial Crowding Out: Effective contribution rate multiplied by earnings less NSSF Contributions multiplied by partial crowding out factor Contribution Alignment: NSSF contribution rate multiplied by earnings above the NSSF Earnings Ceiling
	> NSSF Earnings Ceiling	0%	Covered	

The accumulation of the NSSF (Pillar 1) is projected as follows:

- Contributions to the NSSF were projected as described above.
- Benefit payments were projected in line with the benefit structure set out in the table below.
- Administration and other expenses were assumed to be 0.25% of pensionable earnings defined as earnings to the NSSF earnings ceiling.
- Investment return was estimated by applying expected returns to the various asset classes held under the assumed investment strategy of the NSSF. The assumed investment strategy includes two scenarios, namely, investment in line with Regulation 28 of the Pensions Fund Act No.24 of 1956 reflecting the asset distribution underlying accumulated retirement savings as at 31 December 2019 and a conservative investment strategy allowing for 80% of assets invested in South African bonds with the remaining 20%

invested in the remaining assets classes in the same proportion underlying accumulated retirement savings as at 31 December 2019. Allowance for investment management fees has been made in line with Applying the Status Quo.

The following benefit structure has been confirmed for the NSSF:

Table 4: NSSF Benefit Structure

Benefit Design Item	Description
Fund Type	Career-indexed pension plan
Normal Retirement Age	65
Earnings Limit	R 276 000 in 2018 terms (Alternative: UIF Earnings Limit, R 178 464 in 2020 terms)
Earnings Floor	R 20 000 in 2018 terms
Increases to Earnings Limit	CPI
Increases to Earnings Floor	CPI
Contribution Rate	10%/12%/15% of earnings between the NSSF earnings floor and earnings ceiling
Normal Retirement Benefit	1.09% x pension earnings per year of service
Survivor Benefits	% of normal retirement benefit is paid to dependents, 50% for one dependent, 75%for two dependents and 100% for three of more dependents
Disability Benefit	32.7% x pensionable earnings (immediate vesting)
Death Benefit	40.0% x pensionable earnings (immediate vesting)
Funeral Benefit	R 20 000 in 2018 terms
Phased-in implementation	All formally employed individuals who are aged 64 and younger to join the NSSF at implementation.

Retirement savings were accumulated as under Applying the Status Quo allowing for the various scenarios with respect to how retirement savings may change under Implementing the NSSF. A long-term projection has been carried out projecting the level of savings and investment attributed to the retirement system under Implementing the NSSF compared to under Applying the Status Quo over a 100-year period in line with the methodology outlined above.

3.1.2. Assumptions

The following economic assumptions were applied over the projection period 2020 to 2025.

Table 5: Economic Assumptions

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Real GDP Growth	0.2%	-7.2%	2.6%	1.5%	1.5%	2.1%
Unemployment Rate	28.7%	36.4%	36.1%	36.6%	37.1%	37.2%
CPI	4.1%	3.0%	3.9%	4.3%	4.5%	4.5%
Real Earnings Inflation	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

The number of formally and informally employed individuals has been based on employment estimates as per the StatsSA Quarterly Labour Force Survey for Quarters 1 to 4, 2019. The proportion of the population who remain employed has been projected based on GDP growth assumptions and its impact on the unemployment rate. The ratio of formally employed to employed in 2019 (68.7%) is assumed to remain the same, that is, any employment gains or losses over the projection period are borne by the formally and informally employed in relation to their

share of total employment in 2019. It is further assumed that there is no shift in employment type (formal and informal) as a result of the implementation of the NSSF as discussed in Section **2.5**.

The following expected real returns were applied to accumulated retirement savings over the five-year projection period:

Table 6: Expected Real Returns on Assets

Asset Class	Real Return
International Bonds	-1.0%
International Cash	-1.0%
International Commodities	5.0%
International Equities	5.0%
International Other	5.0%
International Real Estate	6.0%
SA Bonds	4.0%
SA Cash	2.0%
SA Commodities	7.0%
SA Equities	7.0%
SA Other	7.0%
SA Real Estate	6.0%

Returns for international asset classes are expressed in dollar terms. Any depreciation of the rand to the dollar over the five-year period will increase returns.

Demographic assumptions applied to the projection of benefit payments from the NSSF are in line with those used in the International Labour Organisation's (ILO) NSSF projections as present in their report "South Africa Data and Scheme-Specific Assumptions_2020-07-25".

In respect of the long-term projections, the assumptions used have been aligned to those used by the ILO in their NSSF projections as present in their reports "South Africa Data and Scheme-Specific Assumptions_2020-07-25" and "Présentation_Design+Actuarial Valuation + Funding_2020-07-30".

These include a real return of 3.5% net of investment fees in relation to a conservative investment strategy for the NSSF and real salary growth of 1.1%. A real return of 5.0% net of investment fees has been assumed for the accumulation of retirement savings in Pillar 3.

3.2. Projection of Retirement Savings under Applying the Status Quo

3.2.1. Analysis of Individuals Contributing to Retirement Savings

Based on Individual Panel and IRP5 data for the tax year 2017 and 2018, 53% of formally employed males are covered through formal retirement arrangements while 46% of formally employed females are covered. This is in line with coverage rates for the formally employed reported by StatsSA as discussed in Section **2.1**.

Analysis of coverage rates based on age and gender shows increasing coverage with age for both genders. However, coverage is particularly low at ages less than 35, with the maximum coverage rate being 69% for males aged 55 to 59. Coverage rates for males are consistently higher than coverage rates for females, with the difference increasing with age.

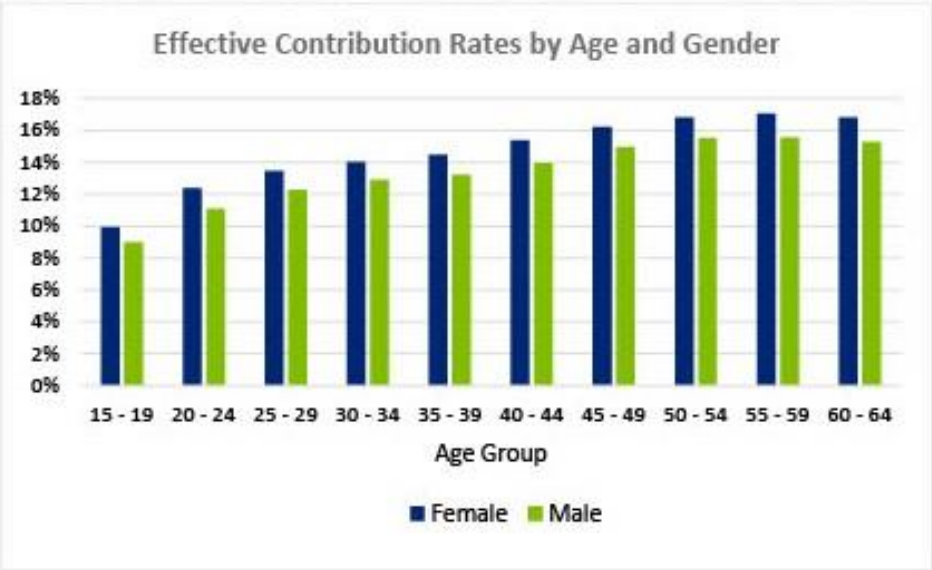
Figure 1: Comparison of Coverage Rate by Age and Gender



It is noted that the above coverage rates should be considered bearing in mind that close to full coverage occurs in the public sector. The resulting coverage rates for private sector employees is therefore lower than presented in the graph above.

With respect to effective contributions[55], these rates increase with age, with females consistently contributing more the males over all age groups considered. This may reflect more conservative views in relation to retirement saving by females. This may also be driven by knowledge that females, on average, need to save more to retirement than males given longer life expectancy.

Figure 2: Comparison of Effective Contribution Rates by Age and Gender



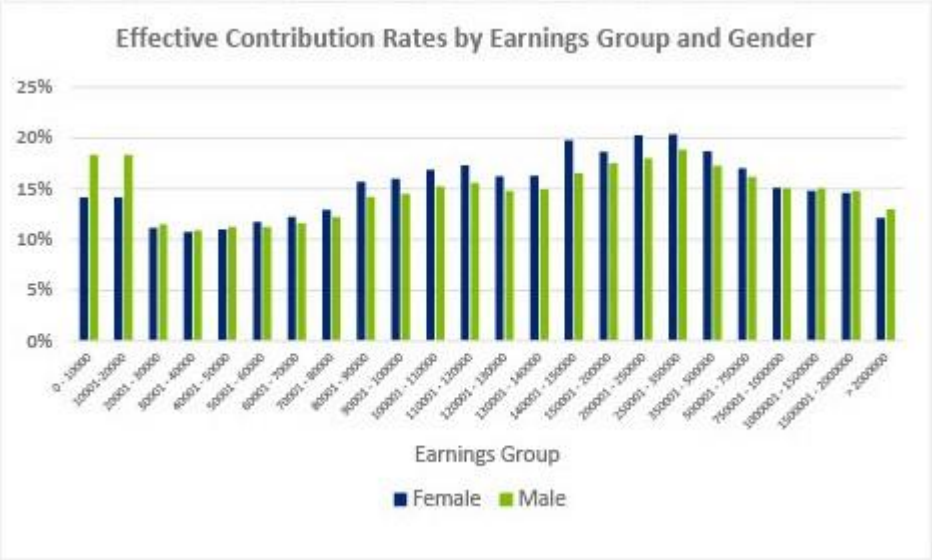
The graph below sets out coverage rates by earnings group and gender. Analysis of coverage rates based on age and gender shows increasing coverage with age for both genders. Coverage of males is higher at across all earnings groups with the exception of the earnings groups between R 200 000 and R 1 000 000 per annum.

[55] Effective contribution rates have been calculated based on earnings defined as the sum of source codes 3601 and 3607.

Figure 3: Comparison of Coverage Rates by Earnings and Gender



Figure 4: Comparison of Effective Contribution Rates by Earnings and Gender



As can be seen in the graphs above coverage rates and effective contribution rates show a strong correlation with earnings level. This is in line with the rationale for the NSSF that although contributory savings and insurance assists in providing basic income protection for some South Africans, access to appropriate retirement provisions for low-income earners remains limited due to high administration costs and minimum contribution constraints. It is noted that with respect to effective contribution rates, these rates increase to a maximum at earnings band R 2 500 001 to R 3 000 000, after which they reduce as income increase. This is likely a result of the limit on tax exempt contributions to retirement savings (currently R 350 000 per annum).

With respect to the high effective contribution rates within the earnings groups to R 20 000 per annum, it is believed that this represents evidence of increasing retirement savings relative to earnings in order to reduce an individual's tax liability and should therefore not be taken as representative of actual effective contribution rates for those earning less than R 20 000 per annum.

3.2.2. Accumulation of Retirement Savings from 2017 to 2019

The following number of formally employed individuals are estimated to be covered in terms of retirement savings over the period 2017 to 2019. It is noted that these coverage rates reflect whether an individual is covered in respect of retirement savings and does not reflect the number of occupational funds or retirement annuities a formally employed individual may belong to.

Table 7: Covered Formally Employed Individuals from 2017 to 2019

Gender	2017	2018	2019
Females	2 372 583	2 387 194	2 377 934
Males	3 370 377	3 370 987	3 336 798
Total	**5 742 960**	**5 758 181**	**5 714 732**

The table below sets out the accumulation of retirement savings in South Africa over the period 2017 to 2019. This has been sourced from FSCA data relating to pension, provident and annuity funds that fall under the Pension Funds Act as well as SARB national financial accounts quarterly reporting which includes both official funds (funds administered by the Department of Finance, Transnet, Telkom and the Post Office which are not subject to regulation and supervision in terms of the Pension Funds Act) and privately administered funds.

Table 8: Accumulation of Retirement Savings from 2017 to 2019

R' million	2017	2018	2019
Opening Balance	**4 083 996**	**4 509 445**	**4 350 270**
Contributions	239 602	258 508	272 105
Benefit Payments[1]	-289 274	-296 422	-313 370
Administration and otherexpenses[2]	-24 004	-26 319	-29 181
Investment Return	499 125	-94 943	315 090
Closing Balance	**4 509 445**	**4 350 270**	**4 594 914**

Notes:
1. Benefit payments include payments made on death, disability, withdrawal and retrenchment as well as lump sum payments made on retirement. Benefit payments are net re-insurance proceeds.
2. Administration and other expenses include re-insurance premiums.

The overall asset allocation split as at 31 December 2019 is as follows:

Table 9: Asset Allocation Split as at 31 December 2019

R' million	31 Dec 2025	
International Bonds	86 972	1.9%
International Cash	45 659	1.0%
International Commodities	2 281	0.0%
International Equities	578 600	12.6%
International Other	19 287	0.4%
International Real Estate	20 876	0.5%
SA Bonds	1 249 000	27.2%
SA Cash	293 637	6.4%

R' million	31 Dec 2025	
International Bonds	86 972	1.9%
International Cash	45 659	1.0%
International Commodities	2 281	0.0%
International Equities	578 600	12.6%
SA Commodities	12 569	0.3%
SA Equities	1 952 524	42.5%
SA Other	62 739	1.4%
SA Real Estate	270 772	5.9%
Total	**6 778 320**	**100.0%**

3.2.3. Projection of the Accumulation of Retirement Savings from 2020 to 2025

The following number of formally employed individuals are expected to be covered in terms of retirement savings over the period 2020 to 2025. It is noted that these coverage rates reflect whether an individual is covered in respect of retirement savings and does not reflect the number of occupational funds or retirement annuities a formally employed individual may belong to.

Table 10: Covered Formally Employed Individuals from 2020 to 2025

Gender	2020	2021	2022	2023	2024	2025
Females	2 107 823	2 146 252	2 151 725	2 154 557	2 179 787	2 205 312
Males	2 957 770	3 011 696	3 019 375	3 023 349	3 058 753	3 094 571
Total	**5 065 593**	**5 157 948**	**5 171 101**	**5 177 906**	**5 238 540**	**5 299 883**

The table below sets out the projected accumulation of retirement savings in South Africa over the period 2020 to 2025 in line with the methodology and assumptions set out above.

Table 11: Accumulation of Retirement Savings from 2020 to 2025

R' million	2020	2021	2022	2023	2024	2025
Opening Balance	4 594 914	4 802 921	5 125 492	5 484 922	5 880 320	6 311 993
Contributions	251 942	271 325	288 795	307 595	331 028	356 253
Benefit Payments[1]	-379 114	-344 973	-373 901	-400 614	-425 081	-456 286
Administration and otherexpenses[2]	-26 318	-28 343	-30 168	-32 132	-34 580	-37 215
Investment Return	361 497	424 563	474 704	520 549	560 306	603 575
Closing Balance	**4 802 921**	**5 125 492**	**5 484 922**	**5 880 320**	**6 311 993**	**6 778 320**

Notes:
1. Benefit payments include payments made on death, disability, withdrawal and retrenchment as well as lump sum payments made on retirement. Benefit payments are net re-insurance proceeds.
2. Administration and other expenses include re-insurance premiums

The projected overall asset allocation split as at 31 December 2025 is as follows:

Table 12: Retirement Asset Allocation Split as at 31 December 2025

R' million	31 Dec 2025	
International Bonds	86 970	1.3%
International Cash	45 658	0.7%
International Commodities	3 289	0.0%
International Equities	834 152	12.3%
International Other	27 806	0.4%
International Real Estate	31 906	0.5%
SA Bonds	1 697 298	25.0%
SA Cash	353 774	5.2%
SA Commodities	20 352	0.3%
SA Equities	3 161 673	46.6%
SA Other	101 592	1.5%
SA Real Estate	413 849	6.1%
Total	**6 778 320**	**100.0%**

3.3. Projection of Retirement and Discretionary Savings under Implementing the NSSF

3.3.1. Projection of the NSSF (Pillar 2) over the period from 2020 to 2025

The following number of formally employed individuals are expected to be covered in relation to the NSSF over the period 2020 to 2025, assuming implementation in 2021.

Table 13: Covered Formally Employed Individuals from 2020 to 2025 (NSSF)

Gender	2020	2021	2022	2023	2024	2025
Females	n/a	4 131 084	4 141 618	4 147 069	4 195 631	4 244 762
Males	n/a	5 521 941	5 536 022	5 543 308	5 608 220	5 673 892
Total	n/a	**9 653 024**	**9 677 639**	**9 690 376**	**9 803 850**	**9 918 654**

The implementation of the NSSF will extend coverage to all formally employed individuals in respect of Pillar 2, approximately doubling coverage.

The tables below set out the projected accumulation of the NSSF in South Africa over the period 2020 to 2025 in line with the methodology and assumptions set out above assuming a contribution rate of 10% to the NSSF allowing for differing investment strategies. Further, a scenario allowing for a 6% contribution rate to the NSSF allowing for the funding of retirement benefits only is considered (allowing for differing investment strategies). This accumulation assumes no supplementary contributions by covered individuals.

Table 14: Accumulation of the NSSF from 2020 to 2025 (10% contribution rate, Regulation 28 Investment Strategy)

R' million	2020	2021	2022	2023	2024	2025
Opening Balance	-	-	145 218	308 472	492 473	700 494
Contributions	-	142 521	149 686	157 320	167 064	177 403
Benefit Payments	-	-133	-3 087	-6 030	-9 438	-13 368
Administration and other expenses	-	-3 563	-3 742	-3 933	-4 177	-4 435
Investment Return	-	6 392	20 398	36 643	54 571	74 862
Closing Balance	**-**	**145 218**	**308 472**	**492 473**	**700 494**	**934 955**

Table 15: Accumulation of the NSSF from 2020 to 2025 (10% contribution rate, Conservative Investment Strategy)

R' million	2020	2021	2022	2023	2024	2025
Opening Balance	-	-	144 558	305 688	485 763	687 660
Contributions	-	142 521	149 686	157 320	167 064	177 403
Benefit Payments	-	-133	-3 087	-6 030	-9 438	-13 368
Administration and other expenses	-	-3 563	-3 742	-3 933	-4 177	-4 435
Investment Return	-	5 733	18 273	32 718	48 447	66 074
Closing Balance	**-**	**144 558**	**305 688**	**485 763**	**687 660**	**913 334**

Table 16: Accumulation of the NSSF from 2020 to 2025 (6% retirement contribution rate, Regulation 28 Investment Strategy)

R' million	2020	2021	2022	2023	2024	2025
Opening Balance	-	-	85 584	182 622	292 976	418 570
Contributions	-	85 513	89 812	94 392	100 239	106 442
Benefit Payments	-	-133	-1 091	-1 865	-3 017	-4 585
Administration and other expenses	-	-3 563	-3 742	-3 933	-4 177	-4 435
Investment Return	-	3 767	12 059	21 760	32 550	44 832
Closing Balance	**-**	**85 584**	**182 622**	**292 976**	**418 570**	**560 824**

Table 17: Accumulation of the NSSF from 2020 to 2025 (6% contribution rate, Conservative Investment Strategy)

R' million	2020	2021	2022	2023	2024	2025
Opening Balance	-	-	85 195	180 977	289 001	410 946
Contributions	-	85 513	89 812	94 392	100 239	106 442
Benefit Payments	-	-133	-1 091	-1 865	-3 017	-4 585
Administration and other expenses	-	-3 563	-3 742	-3 933	-4 177	-4 435
Investment Return	-	3 379	10 803	19 430	28 900	39 576
Closing Balance	**-**	**85 195**	**180 977**	**289 001**	**410 946**	**547 944**

The projected overall asset allocation split as at 31 December 2025 is as follows:

Table 18: NSSF Asset Allocation Split as at 31 December 2025

R' million	31 Dec 2025							
	10% Contribution Rate				6% Retirement Contribution Rate			
	Regulation 28 Investment Strategy		Conservative Investment Strategy		Regulation 28 Investment Strategy		Conservative Investment Strategy	
International Bonds	15 188	1.6%	4 172	0.5%	9 120	1.6%	2 505	0.5%
International Cash	7 973	0.9%	2 190	0.2%	4 788	0.9%	1 315	0.2%
International Commodities	460	0.0%	126	0.0%	276	0.0%	76	0.0%
International Equities	116 747	12.5%	32 066	3.5%	70 034	12.5%	19 235	3.5%
International Other	3 892	0.4%	1 069	0.1%	2 335	0.4%	641	0.1%
International Real Estate	4 314	0.5%	1 185	0.1%	2 588	0.5%	711	0.1%
SA Bonds	246 039	26.3%	724 118	79.3%	147 618	26.3%	434 453	79.3%
SA Cash	55 126	5.9%	15 141	1.7%	33 085	5.9%	9 087	1.7%
SA Commodities	2 661	0.3%	731	0.1%	1 596	0.3%	438	0.1%
SA Equities	413 312	44.2%	113 520	12.4%	247 856	44.2%	68 076	12.4%
SA Other	13 281	1.4%	3 648	0.4%	7 964	1.4%	2 187	0.4%
SA Real Estate	55 961	6.0%	15 370	1.7%	33 564	6.0%	9 219	1.7%
Total	**934 955**	**100.0%**	**913 334**	**100.0%**	**560 824**	**100.0%**	**547 944**	**100.0%**

The investment strategy of the NSSF will have a significant impact on asset allocation. If a conservative

investment strategy is adopted, the majority of assets will be invested in South Africa bonds, representing R 724.1 million as at 31 December 2025. If the basis for the operation allows for the segregation of risk benefits from retirement benefits, with a contribution rate of 6% towards retirement benefits, investment in South African bonds is projected at R 434.5 billion as at 31 December 2025 under a conservative investment strategy.

A comparison of contributions payable to the NSSF over the period from 2021 to 2025 assuming contribution rates of 10%, 12% and 15% respectively to the NSSF as well as a 6% NSSF contribution rate to retirement benefits, is set out in the table below:

Table 19: Comparison of Contributions Payable to the NSSF (10%, 12%, 15% and 6% contribution rates)

R' million	2021	2022	2023	2024	2025
10% Contribution Rate	142 521	149 686	157 320	167 064	177 403
12% Contribution Rate	171 025	179 623	188 785	200 477	212 884
15% Contribution Rate	213 782	224 529	235 981	250 597	266 104
6% Contribution Rate	85 513	89 812	94 392	100 239	106 442

The resulting increase in accumulated funds resulting from increasing the NSSF contribution rate from 10% to 12% and 15% respectively is set out below:

Figure 5: Comparison of the Accumulation of the NSSF (10%, 12% and 15% NSSF contribution rates, Regulation 28 Investment Strategy)



Allowing for an investment strategy in line with Regulation 28, accumulated NSSF assets as at 31 December 2025 increase from R 935.0 billion to R 1 134.3 billion if the contribution rate increases from 10% to 12%. If the contribution rate is 15%, NSSF assets are projected to equal R 1 433.3 billion. Similarly, allowing for a conservative investment strategy in accumulated NSSF assets as at 31 December 2025 increase from R 913.3 billion to R 1 108.1 billion if the contribution rate increases from 10% to 12%. If the contribution rate is 15%, NSSF assets are projected to equal R 1 400.3 billion.

3.3.2. Impact on NSSF (Pillar 2) allowing for Alternative NSSF Earnings Ceilings

A comparison of contributions payable to the NSSF, resulting from a NSSF earnings ceiling in line with the UIF earnings limit (currently R 14 872 per month), over the period from 2021 to 2025 assuming contribution rates of 10%, 12% and 15% respectively to the NSSF as well as a 6% NSSF contribution rate to retirement benefits is set out in the table below:

Table 20: Comparison of Contributions Payable to the NSSF (10%, 12% and 15% contribution rate and 6% retirement contribution rate)

R' Million	2021	2022	2023	2024	2025
10% Contribution Rate	119 966	125 782	131 969	139 897	148 296
12% Contribution Rate	143 959	150 938	158 362	167 876	177 955
15% Contribution Rate	179 948	188 673	197 953	209 845	222 444
6% Contribution Rate	71 979	75 469	79 181	83 938	88 977

The corresponding change in the NSSF as at 31 December 2025, assuming contribution rates of 10%, 12% and 15% respectively to the NSSF as well as a 6% NSSF contribution rate to retirement benefits is set out below:

Table 21: Change in NSSF as at 31 December 2025 (10%, 12% and 15% NSSF contribution rates and 6% retirement contribution rate)

R' Million	Regulation 28 Investment Strategy	Conservative Investment Strategy
10% Contribution Rate	-150 637	-147 176
12% Contribution Rate	-182 745	-178 557
15% Contribution Rate	-230 906	-225 629
6% Contribution Rate	-90 560	-88 493

The projected decrease in the accumulation of the NSSF is approximately 16% across the scenarios considered above.

3.3.3. Impact on NSSF (Pillar 2) allowing for Participation of Informal Employment

Allowing for participation of informally employed individuals in the NSSF, assumed to be those earning above the tax threshold, will result in the following number of additional individuals who are expected to be covered in relation to the NSSF over the period 2020 to 2025, assuming implementation in 2021.

Table 22: Covered Informally Employed Individuals from 2020 to 2025 (NSSF)

Gender	2020	2021	2022	2023	2024	2025
Females	n/a	178 651	179 106	179 342	181 442	183 567
Males	n/a	435 565	436 676	437 251	442 371	447 551
Total	**n/a**	**614 216**	**615 782**	**616 593**	**623 813**	**631 118**

A comparison of additional contributions payable to the NSSF, resulting from the participation of informally employed individuals, over the period from 2021 to 2025 assuming contribution rates of 10%, 12% and 15% respectively to the NSSF as well as a 6% NSSF contribution rate to retirement benefits is set out in the table below:

Table 23: Comparison of Additional Contributions Payable to the NSSF (10%, 12% and 15% contribution rate and 6% retirement contribution rate)

R' million	2021	2022	2023	2024	2025
10% Contribution Rate	26 959	28 158	29 427	31 066	32 802
12% Contribution Rate	32 351	33 790	35 313	37 280	39 362
15% Contribution Rate	40 438	42 237	44 141	46 600	49 203
6% Contribution Rate	26 959	28 158	29 427	31 066	32 802

The corresponding change in the NSSF as at 31 December 2025 resulting from the participation of informally employed individuals, assuming contribution rates of 10%, 12% and 15% respectively to the NSSF as well as a 6% NSSF contribution rate to retirement benefits is set out below:

Table 24: Change in NSSF as at 31 December 2025 (10%, 12% and 15% NSSF contribution rates and 6% retirement contribution rate)

R' Million	Regulation 28 Investment Strategy	Conservative Investment Strategy
10% Contribution Rate	175 653	171 579
12% Contribution Rate	212 956	208 028
15% Contribution Rate	268 909	262 701
6% Contribution Rate	106 013	103 577

3.3.4. Supplementary Contributions to the NSSF

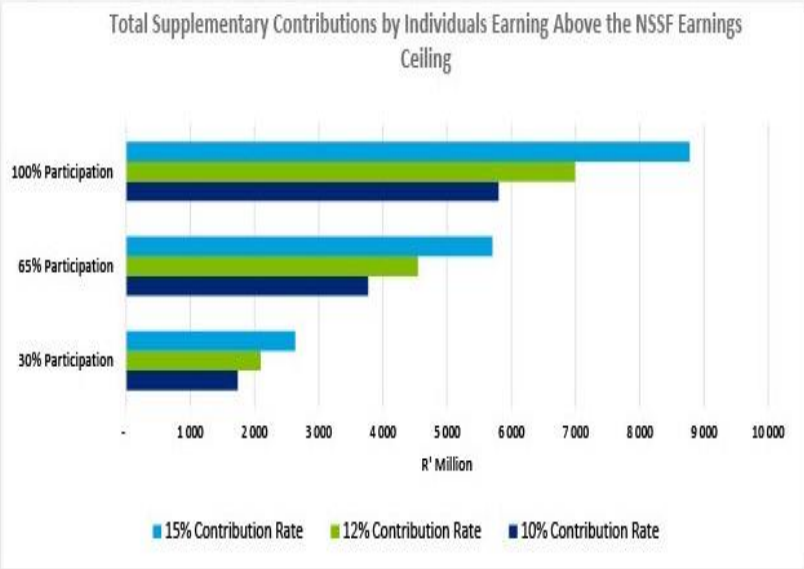
Allowing for participation of individuals who earn above the NSSF earnings ceiling, not covered by retirement savings on introduction of the NSSF, will result in the following number of additional individuals who could participate in Pillar 3 over the period 2020 to 2025, assuming implementation in 2021.

Table 25: Number of Formally Employed Individuals who are eligible to Participate in NSSF (Pillar 3) from 2020 to 2025

	2020	2021	2022	2023	2024	2025
Total	**n/a**	**122 464**	**122 776**	**122 938**	**124 377**	**125 834**

Various scenarios have been considered with respect to possible supplementary contributions to the NSSF for individuals who earn above the NSSF earnings ceiling, not covered by retirement savings on introduction of the NSSF. A comparison of the total supplementary contributions to the NSSF over the period 2021 to 2025 by these individuals allowing for participation rates of 30%, 65% and 100%, assuming contribution rates of 10%, 12% and 15% respectively to the NSSF is set out below:

Figure 6: Comparison of Total Supplementary Contributions to the NSSF by Individuals Earnings



It is noted that the supplementary contributions to the NSSF reflected in the graph above are net of administration fees. If 100% of individuals who earn above the NSSF earnings ceiling make supplementary contributions to the NSSF, these supplementary contributions will amount to R 5.8 billion assuming a NSSF contribution rate of 10%. These contributions will increase to R 8.8 billion assuming a NSSF contribution rate of 15%. Allowing for a 65% participation rate, total supplementary contributions amount to R 3.8 billion (10% NSSF contribution rate) increasing to R 5.7 billion (15% NSSF contribution rate). Similarly, allowing for a 30% participation rate, total supplementary contributions amount to R 1.7 billion (10% NSSF contribution rate) increasing to R 2.6 billion (15% NSSF contribution rate).

3.4. Analysis of the Projected Impact of the NSSF on existing Retirement Funds.

3.4.1. Projection of the Accumulation of Retirement Savings from 2020 to 2025 allowing for Implementation of the NSSF

Various scenarios have been considered with respect to how retirement savings may change under Implementing the NSSF.

It is noted that the scenario with respect to the 10% contribution rate to the NSSF is representative of the combined NSSF contribution rate of 10% allowing for risk benefit and a separate NSSF contribution rate of 6% to retirement benefits and 4% to risk benefits.

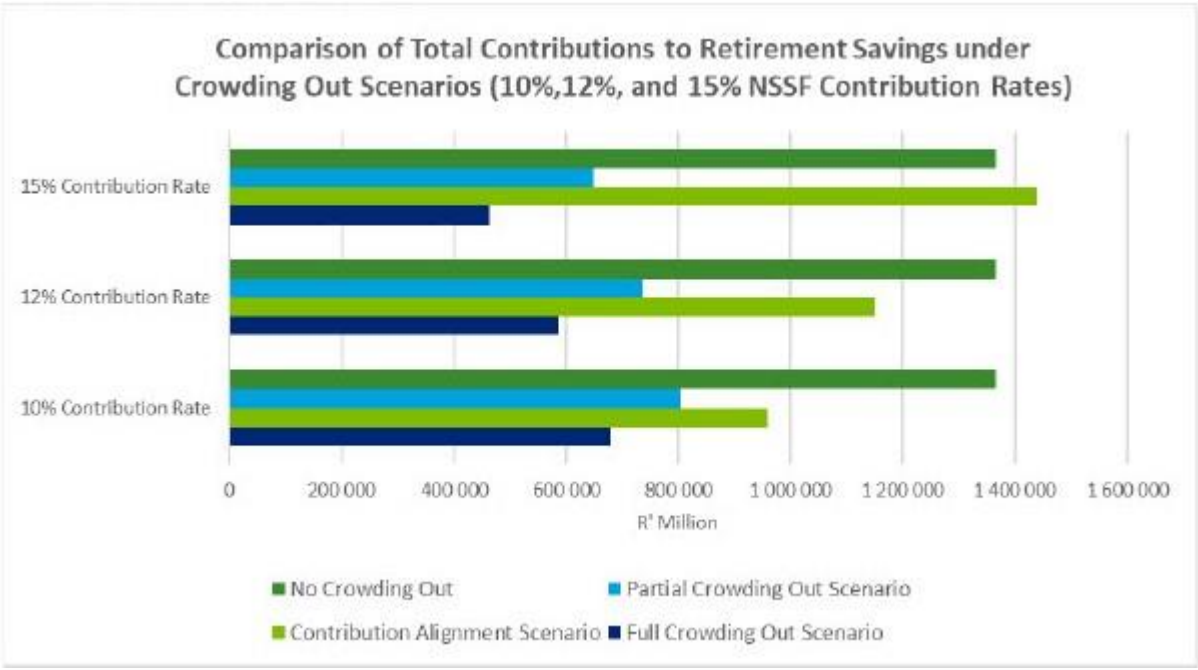
The following number of formally employed individuals are expected to be covered in terms of retirement savings over the period 2020 to 2025 allowing for Implementation of the NSSF and the various crowding out scenarios. Coverage has been calculated as the proportion of the formally employed who contribute to retirement savings. It therefore does not allow for individuals who belong to more than one retirement savings vehicle.

Table 26: Covered Formally Employed Individuals from 2020 to 2024 (Base Scenario)

	2020	2021	2022	2023	2024	2025
Full Crowding Out Scenario (10% NSSF Contribution Rate)	5 065 593	5 157 948	5 171 101	5 177 906	5 238 540	5 299 883
Full Crowding Out Scenario (12% NSSF Contribution Rate)	5 065 593	2 448 425	2 466 436	2 488 137	2 538 508	2 602 656
Full Crowding Out Scenario (15% NSSF Contribution Rate)	5 065 593	2 264 970	2 277 717	2 293 517	2 320 374	2 347 549
Contribution Alignment Scenario	5 065 593	2 743 990	2 901 607	2 909 218	2 946 534	2 981 176
Partial Crowding Out Scenario(10% NSSF Contribution Rate)	5 065 593	2 448 425	2 466 436	2 488 137	2 538 508	2 602 656
Partial Crowding Out Scenario(12% NSSF Contribution Rate)	5 065 593	2 264 974	2 277 722	2 293 520	2 320 377	2 347 549
Partial Crowding Out Scenario (15% NSSF Contribution Rate)	5 065 593	1 648 468	1 652 672	1 752 543	1 823 804	1 911 498

A comparison of the total contributions to retirement savings over the period 2021 to 2025 under these scenarios, assuming contribution rates of 10%, 12% and 15% respectively to the NSSF is set out below:

Figure 7: Comparison of Total Contributions to Retirement Savings from 2021 to 2025 under Crowding Out Scenarios (10%, 12% and 15% NSSF Contribution Rates)



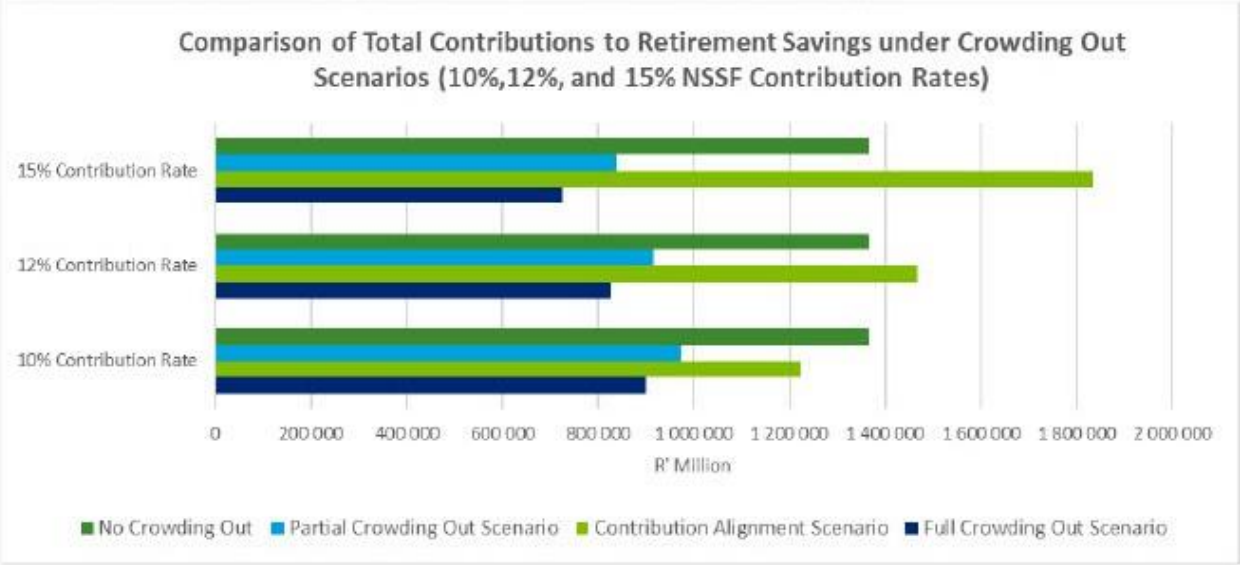
It is noted that the contributions to retirement savings reflected in the graph above are net of administration fees. Where no crowding out occurs, total contributions over the period 2021 to 2025 to retirement savings amount to R 1 366.2 billion, in line with the Applying the Status Quo scenario. This is considered a theoretical outcome given that no crowding out will not be possible for low-income earners.

Assuming partial crowding out, total contributions over the period 2021 to 2025 reduce by 50% (10% NSSF contribution rate). The reduction increases to 66% at a 15% NSSF contribution rate. Under the Contribution Alignment Scenario, total contributions to retirement savings reduce by 30% assuming a NSSF contribution rate of 10%. Given the alignment of contribution rates to the NSSF, the reduction increases to an increase of 5% assuming

a higher NSSF contribution rates of 15%. Under full crowding out, total contributions over the period 2021 to 2025 reduce by 41% assuming a NSSF contribution rate of 10%, increasing to 53% assuming a NSSF contribution rate of 15%.

Allowing for a NSSF earnings ceiling equal to the current UIF earnings limit, the comparison of the total contributions to retirement savings over the period 2021 to 2025 under these scenarios, assuming contribution rates of 10%, 12% and 15% respectively to the NSSF is as follows:

Figure 8: Comparison of Total Contributions to Retirement Savings from 2021 to 2025 under Crowding Out Scenarios (10%, 12% and 15% NSSF Contribution Rates, NSSF earnings ceiling equal to UIF earnings limit)



Reducing the NSSF earnings ceiling to the current UIF limit reduces the extent to which contributions to retirement savings are crowded out under the various crowding out scenarios. Assuming partial crowding out, total contributions over the period 2021 to 2025 reduce by 34% (10% NSSF contribution rate). The reduction increases to 47% at a 15% NSSF contribution rate. Under the Contribution Alignment Scenario, total contributions to retirement savings reduce by 10% assuming a NSSF contribution rate of 10%. Given the alignment of contribution rates to the NSSF, the reduction increases to an increase of 34% assuming a higher NSSF contribution rates of 15%. Under full crowding out, total contributions over the period 2021 to 2025 reduce by 29% assuming a NSSF contribution rate of 10%, increasing to 39% assuming a NSSF contribution rate of 15%.

The Government Employees Pension Fund represents 44% of total retirement savings as at 31 December 2019, representing funds of R 1.9 trillion. The NSSF will be mandatory for all formally employed individuals including public sector employees. The implementation of the NSSF is therefore expected to have a significant impact on the Government Employees Pension Fund.

Based on the most recent actuarial valuation report (effective 31 March 2018) for the Government Employees Pension Fund, the fund is 75.5% funded on a long-term funding basis and 108.3% on a minimum funding level basis. Given the immediate reduction in contributions expected on implementation of the NSSF and the delay before a reduction in benefit payments occurs due to the implementation of the NSSF, the funding position is expected to deteriorate unless contributions to the Government Employees Pension Fund are increased. It is noted that the funding policy of the fund requires the Trustees to take steps to ensure that the minimum funding level is always above 90% and to strive to maintain a long-term funding level at or above 100%.

The corresponding projected retirement savings as at 31 December 2025 under the various scenarios assuming contribution rates of 10%, 12% and 15% respectively to the NSSF is set out below, including an assessment of the change in retirement savings:

Table 27: Retirement Savings as at 31 December 2025 under Crowding Out Scenarios (10%, 12% and 15% NSSF contribution rates)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate
Full Crowding Out Scenario	6 003 905	5 901 832	5 767 268
Contribution Alignment Scenario	6 378 265	6 652 397	7 063 595
Partial Crowding Out Scenario	6 138 780	6 063 682	5 969 580
No Crowding Out	6 778 320	6 778 320	6 778 320

Table 28: Change in Retirement Savings as at 31 December 2025 under Crowding Out Scenarios (10%, 12% and 15% NSSF contribution rates)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate
Full Crowding Out Scenario	-774 415	-876 488	- 1 011 052
Contribution Alignment Scenario	-400 055	-125 923	285 275
Partial Crowding Out Scenario	-639 540	-714 638	-808 740
No Crowding Out	-	-	-

Accumulated retirement savings as at 31 December 2025, is lowest under the Full Crowding Out Scenario (15% NSSF contribution rate) given this scenario results in the most significant reduction in contributions to retirement savings. However, it is noted, that the reduction in contributions to retirement savings may increase discretionary savings.

Allowing for a NSSF earnings ceiling equal to the UIF earnings limit, the corresponding projected retirement savings as at 31 December 2025 under the various scenarios assuming contribution rates of 10%, 12% and 15% respectively to the NSSF is set out below, including an assessment of the change in retirement savings:

Table 29: Retirement Savings as at 31 December 2025 under Crowding Out Scenarios (10%, 12% and 15% NSSF contribution rates, NSSF earnings ceiling equal to UIF earnings limit)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate
Full Crowding Out Scenario	6 243 428	6 162 768	6 054 166
Contribution Alignment Scenario	6 665 402	6 996 962	7 494 301
Partial Crowding Out Scenario	6 324 686	6 260 278	6 176 053
No Crowding Out	6 778 320	6 778 320	6 778 320

Table 30: Change in Retirement Savings as at 31 December 2025 under Crowding Out Scenarios (10%, 12% and 15% NSSF contribution rates, NSSF earnings ceiling equal to UIF earnings limit)

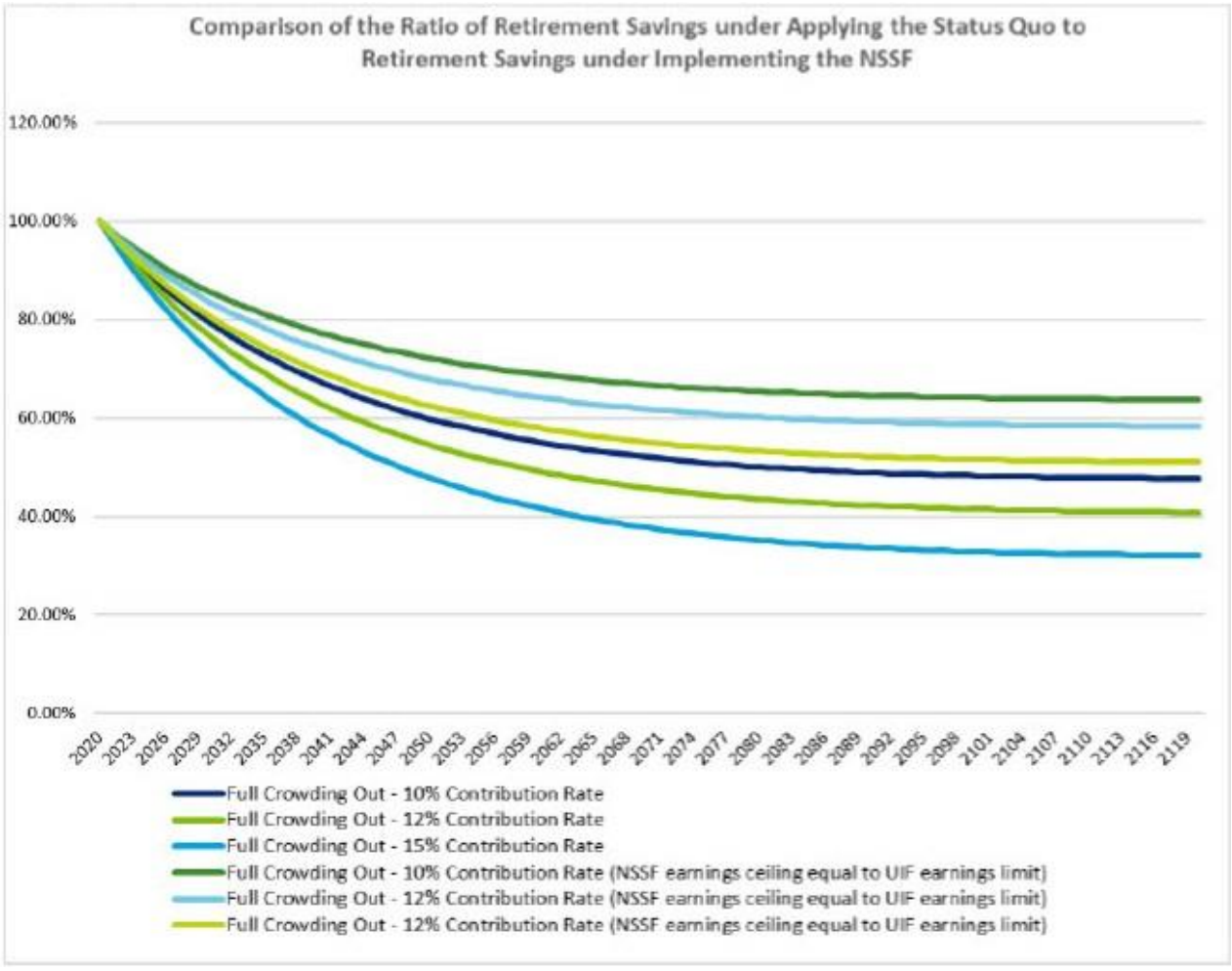
R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate
Full Crowding Out Scenario	-534 892	-615 552	-724 154
Contribution Alignment Scenario	-112 918	218 642	715 981
Partial Crowding Out Scenario	-453 634	-518 042	-602 267
No Crowding Out	-	-	-

As noted above, reducing the NSSF earnings ceiling to the current UIF limit reduces the extent to which contributions to retirement savings are crowded out under the various crowding out scenarios hence increases projected retirement savings for all scenarios relative to an NSSF earnings ceiling of R 276 000 in 2018 terms.

3.4.2. Comparison of Projection of the Accumulation of Retirement Savings under Applying the Status Quo to under the Implementation of the NSSF

Over the long term, the implementation of the NSSF will reduce the accumulation of retirement savings compared to under Applying the Status Quo. The ratio of accumulated retirement savings under Implementing the NSSF to under Applying the Status Quo has been projected over a 100-year period assuming a NSSF contribution rate of 10%, 12% and 15% respectively. This projection has been done under the Full Crowding Out Scenario.

Figure 9: Comparison of the Ratio of Retirement Savings under Applying the Status Quo to Retirement Savings under Implementing the NSSF (10%, 12% and 15% NSSF Contribution Rates)



The reduction in the ratio of accumulated retirement savings under Implementing the NSSF to under Applying the Status Quo is significant over the first 34 years, after which the reduction slows until equilibrium is reached at 48% of accumulated retirement savings under Applying the Status Quo assuming NSSF contributions of 10%, 41% of accumulated retirement savings under Applying the Status Quo assuming NSSF contributions of 12% and 32% of accumulated retirement savings under Applying the Status Quo assuming NSSF contributions of 15%.

If the NSSF earnings ceiling is set equal to the current UIF earnings limit, equilibrium is reached at 64% of accumulated retirement savings under Applying the Status Quo assuming NSSF contributions of 10%, 58% of accumulated retirement savings under Applying the Status Quo assuming NSSF contributions of 12% and 51% of accumulated retirement savings under Applying the Status Quo assuming NSSF contributions of 15%.

3.5. Analysis of the Projected Impact of the NSSF on Changes in the Consumption, Saving and Investment Behaviour of Households and Firms

In economic terms, an increase in household savings translates to a decrease in household consumption if borrowing is not increased to maintain consumption levels and vice versa. The impact of the NSSF in terms of consumption will depend on whether individuals are covered in respect of retirement savings when the NSSF is implemented or not covered and their ability to borrow.

Historically, households in South Africa have displayed low and declining household savings rates with household savings rates being close to zero. With respect to 2019, South Africa's National Financial Accounts show that the households net borrowing position was R10 billion. Therefore, despite providing financial intermediaries with funds of R150 billion, households sourced R163 billion from non-financial business enterprises.

3.5.1. Individuals Covered in Respect of Retirement Savings on NSSF Implementation

Under the Full Crowding Out Scenario, full displacement of contributions due to the NSSF will result in no change in consumption for those individuals where current effective contributions rates are higher than the NSSF contribution rate. Where effective contribution rates are lower than the NSSF contribution rate, reduced consumption will be required in respect of these individuals if borrowing is note increased to maintain consumption levels. Therefore, the impact on consumption and borrowing is dependent on the NSSF contribution rate. The table below sets out the reduction in possible consumption resulting from the implementation of the NSSF (assuming no increase in borrowing). This is based on an assumption that employers will meet approximately 60% of the increase in contributions based on an analysis of IRP5 data for the 2017 and 2018 tax years.

Table 31: Full Crowding Out Scenario: Reduction in Consumption by Households Covered in Respect of Retirement Savings on NSSF Implementation (10%, 12% and 15% NSSF contribution rates)

R' million	2020	2021	2022	2023	2024
10% Contribution Rate	-	9 152	9 569	10 112	10 696
12% Contribution Rate	-	15 075	15 787	16 703	17 673
15% Contribution Rate	-	25 550	26 599	28 012	29 516

As per the table above, the reduction in consumption is linked to the level of NSSF contributions. It is noted that the impact of reduced consumption will be more significant for low-income earners, particularly, if a NSSF contribution rate of 15% is implemented. This can be mitigated by transitioning in the requirement for contributions to the NSSF.

3.5.2. Individuals Not Covered in Respect of Retirement Savings on NSSF Implementation

Approximately half of formally employed individuals are not covered in respect of retirement savings. The implementation of the NSSF will result in a reduction in consumption for these individuals if borrowing is not increased to maintain consumption levels resulting from the requirement to pay contributions to the NSSF on earnings to the earnings ceiling, if earning above the NSSF earnings floor.

The table below sets out the reduction in consumption resulting from the implementation of the NSSF.

Table 32: Reduction in Consumption by Households not Covered in Respect of Retirement Savings on NSSF Implementation (10%, 12% and 15% NSSF contribution rates)

R' million	2020	2021	2022	2023	2024
10% Contribution Rate	27 157	28 314	28 908	29 820	30 760
12% Contribution Rate	32 587	33 977	34 690	35 785	36 911
15% Contribution Rate	40 734	42 472	43 362	44 731	46 139

Given the coverage rates in respect of retirement savings based on formal employment for low-income earners presented in Section **3.2.1**, the impact of consumption will be most significantly felt by these individuals, given their ability to borrow is limited compared to high-income earners. It is noted that the average earnings of these individuals is R 45 000 in 2021 terms.

Half of the contributions due to the NSSF will be met by employers, therefore firms will face increased employment expenditure in line with the figures set out in the table above. Given this will impact low-income earners more significantly, given the that the average earnings of affected individuals is R 45 000 in 2021 terms, it has been proposed that wage subsidies could be implemented to minimise disruptions to the demand of supply of labour associated with the introduction of mandatory contributions.

The tables below set out the expected contribution subsidy resulting from the implementation of the NSSF. This has been calculated based on a full subsidy of contributions for those individuals' earnings less than the legislated minimum wage[56] and the SARS tax threshold for comparison purposes.

Table 33: Contribution Subsidy for Individuals Earnings less than the Minimum Wage and not Covered in Respect of Retirement Savings on NSSF Implementation (10%, 12% and 15% NSSF contribution rates)

R' million	2020	2021	2022	2023	2024
10% Contribution Rate	7 828	8 192	8 653	9 236	9 858
12% Contribution Rate	9 394	9 830	10 384	11 084	11 830
15% Contribution Rate	11 742	12 287	12 980	13 854	14 788

Table 34: Contribution Subsidy for Individuals Earnings less than the SARS Tax Threshold and not Covered in Respect of Retirement Savings on NSSF Implementation (10%, 12% and 15% NSSF contribution rates)

R' million	2020	2021	2022	2023	2024
10% Contribution Rate	20 280	21 409	22 616	24 139	25 106
12% Contribution Rate	24 335	25 691	27 139	28 967	30 127
15% Contribution Rate	30 419	32 113	33 924	36 209	37 659

It is expected that some disruption will occur at the ceiling at which the subsidisation of contributions will cease. This could be mitigated to an extent by a scaling down the level of subsidisation over a pre-defined earnings range. Based on the analysis set out in Section 4.1.3, individuals covered in respect of retirement savings, contribute at a minimum of 11% of earnings across genders on an age group and earnings group basis. Therefore, disruption will occur at NSSF contribution rates of 12% and 15% and for those who are not covered in respect of retirement savings, ranging from approximately 80% at the NSSF earnings floor to 20% at the NSSF earnings ceiling.

It is noted that the projections in relation to the NSSF assume no disruption in that the subsidisation of contributions will be met by funding through the government.

[56] Employment and Labour on new National Minimum Wage rate | South African Government (www.gov.za)

3.6. Analysis of the Projected Impact of the NSSF on Changes in the Flow of Funds between Households, Financial Institutions and Government

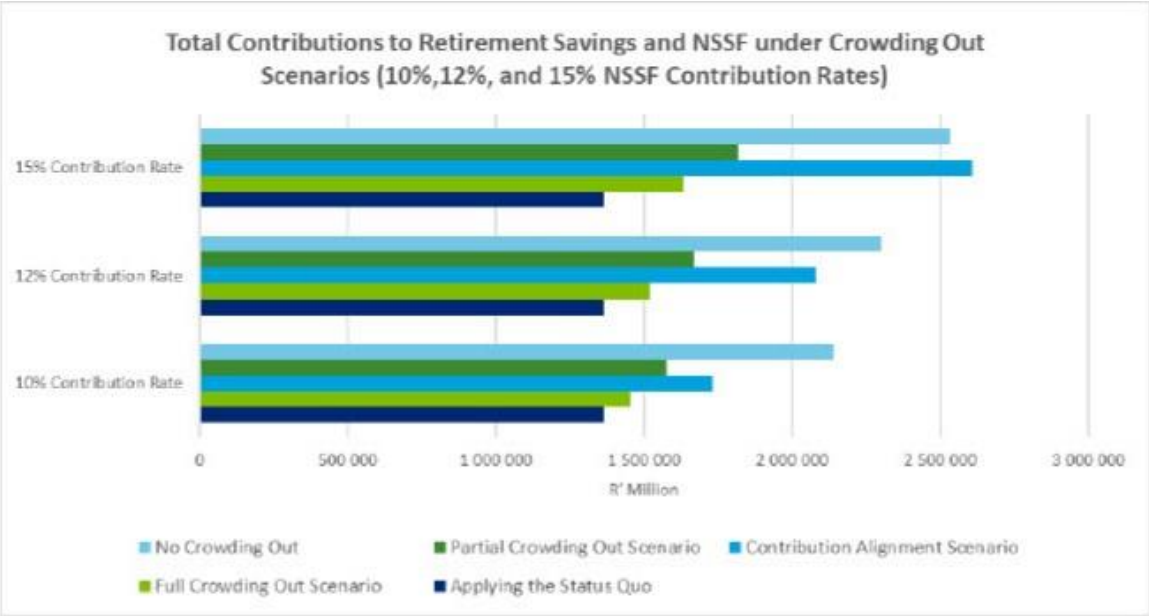
3.6.1. Comparison of the Total of Contributions towards Retirement Savings and the NSSF under Applying the Status Quo to Allowing for the Implementation of the NSSF

Under the various crowding out scenarios, the total of contributions towards the NSSF and retirement savings is either greater or less than contributions towards retirement savings with no implementation of the NSSF.

A comparison of the total contributions to the NSSF and retirement savings over the period 2021 to 2025 under the crowding out scenarios, assuming contribution rates of 10%, 12% and 15% respectively to the NSSF is set out below. Contributions arising under Applying the Status Quo are included for comparison purposes. It is noted that this analysis excludes the impact of the NSSF Supplementary Fund that contributions to the NSSF and retirement savings reflected in the graph above are net of administration fees.

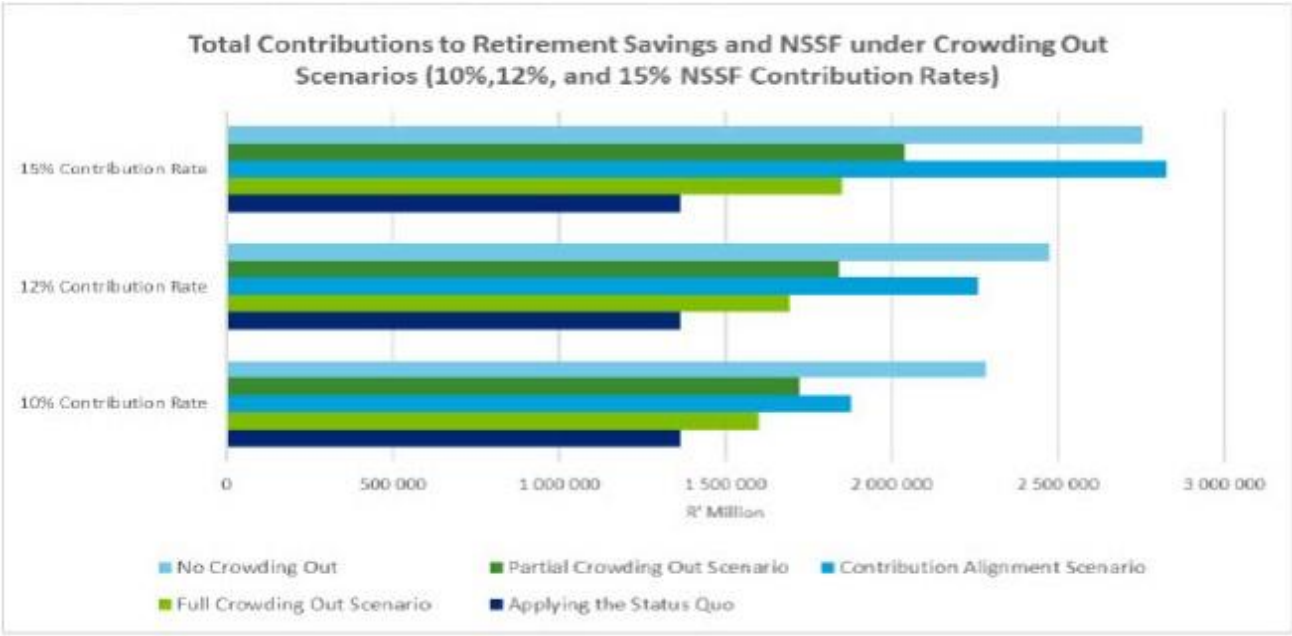
It is noted that the scenario with respect to the 10% contribution rate to the NSSF is representative of the combined NSSF contribution rate of 10% allowing for risk benefit and a separate NSSF contribution rate of 6% to retirement benefits and 4% to risk benefits.

Figure 10: Total Contributions to Retirement Savings and NSSF under Crowding Out Scenarios (10%, 12%, 15% NSSF Contribution Rates, Formal Employment)



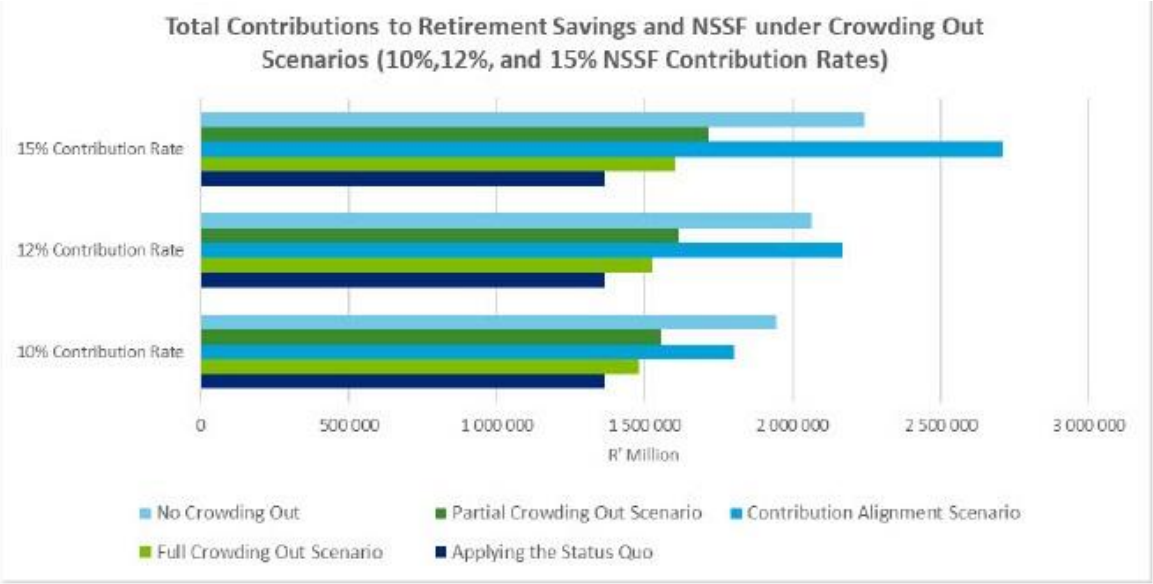
A comparison of the total contributions to the NSSF and retirement savings, allowing for the participation of informally employed individuals over the period 2021 to 2025 under the crowding out scenarios, assuming contribution rates of 10%, 12% and 15% respectively to the NSSF is set out below.

Figure 11: Total Contributions to Retirement Savings and NSSF under Crowding Out Scenarios (10%, 12% and 15% NSSF Contribution Rates, Formal Employment and Informal Employment)



If the NSSF earnings ceiling is set equal to the current UIF earnings limit, the resulting comparison of the total contributions to the NSSF and retirement savings, over the period 2021 to 2025 under the crowding out scenarios, assuming contribution rates of 10%, 12% and 15% respectively to the NSSF is set out below.

Figure 12: Total Contributions to Retirement Savings and NSSF under Crowding Out Scenarios (10%, 12% and 15% NSSF Contribution Rates, Formal Employment, NSSF earnings ceiling equal to UIF earnings limit)



Allowing for the participation of the informally employed increases total contributions to the NSSF and retirement savings by between 17.0% (Full Crowding Out Scenario at NSSF contribution rate of 10%) to 107.0% (Contribution Alignment Scenario at NSSF contribution rate of 15%). Similarly, setting the NSSF earnings ceiling equal to the UIF earnings limit, increases total contributions to the NSSF and retirement savings by between 8.3% (Full Crowding Out Scenario at NSSF contribution rate of 10%) to 198.4% (Contribution Alignment Scenario at NSSF contribution rate of 15%).

Considering all scenarios above, unless those individuals who are high earners who are currently covered in respect of retirements savings significantly reduce their contributions to retirement (which will be limited by the quasi-mandatory nature of Pillar 3), the implementation of the NSSF is not likely to reduce ongoing contributions to retirement savings.

3.6.2. Comparison of the Total of Accumulated Retirement Savings and the NSSF under Applying the Status Quo to Allowing for the Implementation of the NSSF

The corresponding change in the total of projected retirement savings and the NSSF as at 31 December 2025 under the various scenarios assuming contribution rates of 10%, 12%, 15% and 6% (retirement benefits only) respectively to the NSSF and allowing for the alternative investment strategies for the NSSF are set out below:

Table 35: Change in Projected Retirement Savings and NSSF as at 31 December 2025 under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, Formal Employment, Regulation 28 Investment Strategy)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate	6% Contribution Rate
Full Crowding Out Scenario	160 541	257 824	422 296	-213 591
Contribution Alignment Scenario	534 900	1 008 389	1 718 623	160 769
Partial Crowding Out Scenario	295 416	419 674	624 608	-78 716
No Crowding Out	934 955	1 134 312	1 433 348	560 824
Applying the Status Quo	-	-	-	-

Table 36: Change in Projected Retirement Savings and NSSF as at 31 December 2025 under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates NSSF contribution rates, Formal Employment, Conservative Investment Strategy)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate	6% Contribution Rate
Full Crowding Out Scenario	138 919	231 662	389 323	-226 471
Contribution Alignment Scenario	513 279	982 228	1 685 650	147 889
Partial Crowding Out Scenario	273 794	393 512	591 636	-91 596
No Crowding Out	913 334	1 108 151	1 400 375	547 944
Applying the Status Quo	-	-	-	-

Allowing for the participation of informally employed individuals, the change in projected retirement savings and NSSF as at 31 December 2025 is set out below:

Table 37: Change in Projected Retirement Savings and NSSF as at 31 December 2025 under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, Formal Employment and Informal Employment, Regulation 28 Investment Strategy)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate	6% Contribution Rate
Full Crowding Out Scenario	336 194	470 780	691 205	-107 578
Contribution Alignment Scenario	710 554	1 221 345	1 987 532	266 782
Partial Crowding Out Scenario	471 069	632 630	893 517	27 297
No Crowding Out	1 110 609	1 347 268	1 702 257	666 837
Applying the Status Quo	-	-	-	-

Table 38: Change in Projected Retirement Savings and NSSF as at 31 December 2025 under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, Formal Employment and Informal Employment, Conservative Investment Strategy)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate	6% Contribution Rate
Full Crowding Out Scenario	310 499	439 690	652 024	-122 895
Contribution Alignment Scenario	684 858	1 190 256	1 948 352	251 465
Partial Crowding Out Scenario	445 374	601 540	854 337	11 981
No Crowding Out	1 084 913	1 316 179	1 663 077	651 520
Applying the Status Quo	-	-	-	-

Allowing for the NSSF earnings ceiling to be set equal to the current UIF earnings limit, the change in projected retirement savings and NSSF as at 31 December 2025 is set out below:

Table 39: Change in Projected Retirement Savings and NSSF as at 31 December 2025 under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, NSSF earnings ceiling equal to UIF earnings limit, Formal Employment, Regulation 28 Investment Strategy)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate	6% Contribution Rate
Full Crowding Out Scenario	165 123	233 725	349 016	-115 430
Contribution Alignment Scenario	587 097	1 067 919	1 789 151	306 545
Partial Crowding Out Scenario	246 381	331 235	470 903	-34 171
No Crowding Out	700 015	849 277	1 073 170	419 463
Applying the Status Quo	-	-	-	-

Table 40: Change in Projected Retirement Savings and NSSF as at 31 December 2025 under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, NSSF earnings ceiling equal to UIF earnings limit, Formal Employment, Conservative Investment Strategy)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate	6% Contribution Rate
Full Crowding Out Scenario	148 929	214 130	324 318	-125 069
Contribution Alignment Scenario	570 904	1 048 324	1 764 454	296 905
Partial Crowding Out Scenario	230 187	311 640	446 206	-43 811
No Crowding Out	683 821	829 682	1 048 473	409 823
Applying the Status Quo	-	-	-	-

The total of accumulated retirement savings and the NSSF as at 31 December 2025, is lowest under the Full Crowding Out for all scenarios considered considering NSSF contributions as at rate of 10%, 12 %, 15% and 6% (retirement benefits only). In line with the change in total contributions towards the NSSF and retirement savings, allowing for the participation of the informally employed, increases the projected accumulation of the NSSF and retirement savings to a greater extent that setting the NSSF earnings ceiling equal to the UIF earnings limit.

Based on the projected accumulation of retirement savings under the various scenarios, accumulated retirement savings and the NSSF is not expected decrease over the period considered with the exception of a NSSF contribution rate of 6% towards retirement benefits. However over the long term, the segregation of funding for retirement benefits in the NSSF, increases the sustainability of the NSSF over the long term (discussed below).

It is noted that where the level of savings and investments attributed to the retirement system after implementation of the NSSF, compared to Applying the Status Quo, is expected to increase over the period considered, any increase in savings channelled to the retirement system may be offset by decreases in individuals' discretionary savings.

Funds channelled through financial intermediaries are therefore not expected to reduce given the implementation of the NSSF. However, the underlying asset allocation will differ dependent on the investment strategy of the NSSF. In particular, based on the projected asset allocation of funds in 2025, allowing for no implementation of the NSSF, investment in government bonds in projected to reach R 1 697 billion assuming investment in line in asset allocations as at 31 December 2019. Allowing for the implementation of the NSSF with an investment strategy in line with Regulation 28, investment in government bonds is projected to reach R 1 943 billion and investment in South African equities R 3 575 billion under the Full Crowding Out Scenario allowing for NSSF contributions of 15%. Allowing for the implementation of the NSSF with a conservative investment strategy, investment in government bonds is projected to reach R 2 421 billion and investment in South African equities R 3 275 billion under the Full Crowding Out Scenario allowing for NSSF contributions of 15%.

Allowing for alternative crowding out scenarios will increase investment in South African equities and bonds further.

If the informally employed participate in the NSSF and the NSSF earnings ceiling is set equal to the UIF earnings limit, projected accumulation of the NSSF and retirement savings is increased further. The resulting investment in South African equities and bonds will therefore increase.

Over the long term, the implementation of the NSSF will impact the total funds available for savings and investment under the retirement system. The ratio of accumulated retirement system savings and investments under Implementing the NSSF compared to under Applying the Status Quo has been projected over a 100-year period assuming a NSSF contribution rate of 10%, 12% and 15% respectively. This projection has been done under the various crowding out scenarios.

The projections below assume a fixed NSSF contribution rate over the 100% period until the NSSF reduces to zero. Any increases to contributions to the NSSF are assumed to be adequate to meet ongoing cash flow from the NSSF with no subsequent reserve being built up.

Figure 13: Comparison of the Total of Accumulated Retirement Savings and the NSSF under Implementing the NSSF to Applying the Status Quo (10% NSSF Contribution Rate, Formal Employment, Conservative Investment Strategy)

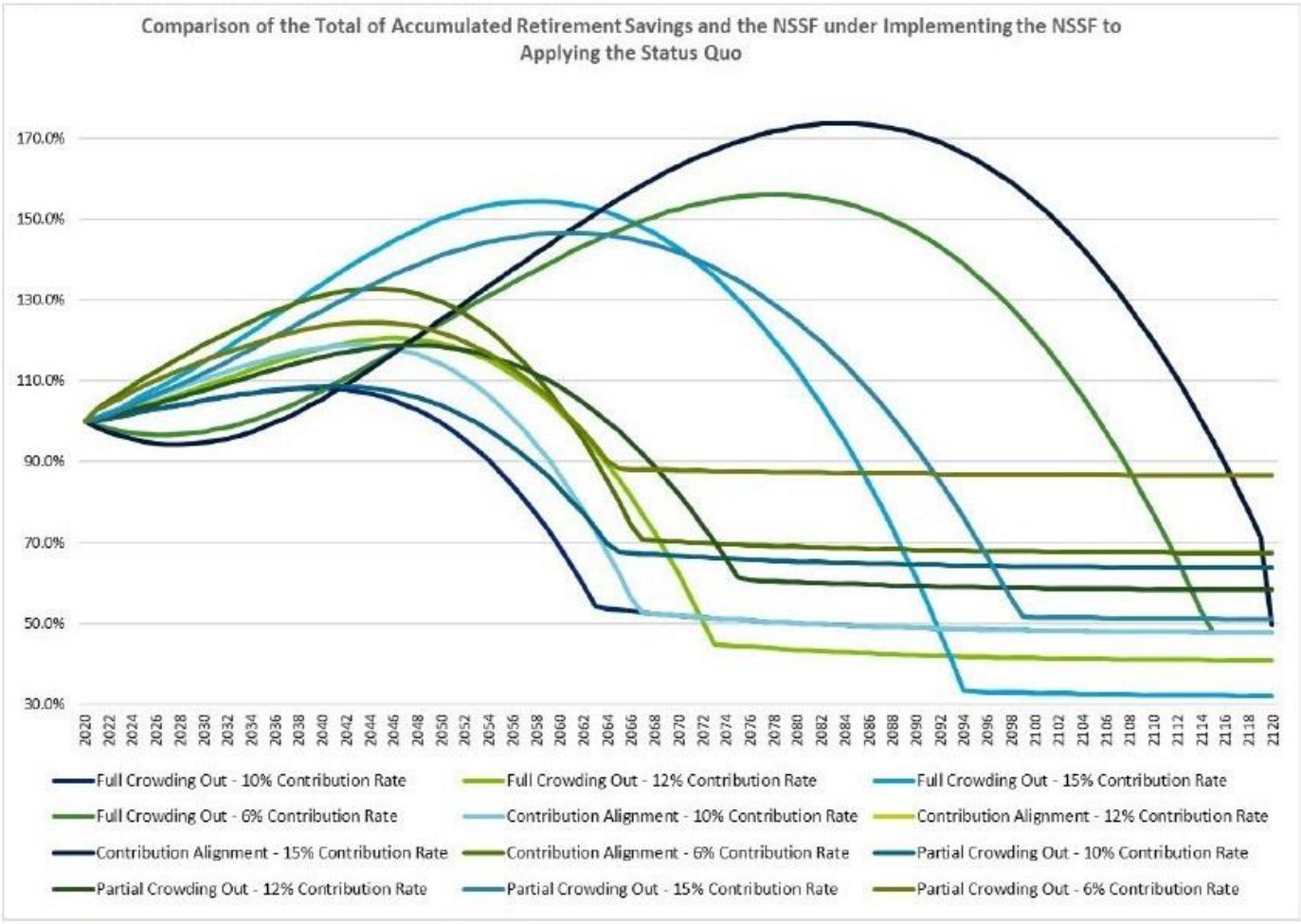


Figure 14: Comparison of the Total of Accumulated Retirement Savings and the NSSF under Implementing the NSSF to Applying the Status Quo (10%, 12%, 15% and 6% NSSF Contribution Rates, Full Crowding Out, Formal Employment and Informal Employment Conservative Investment Strategy)

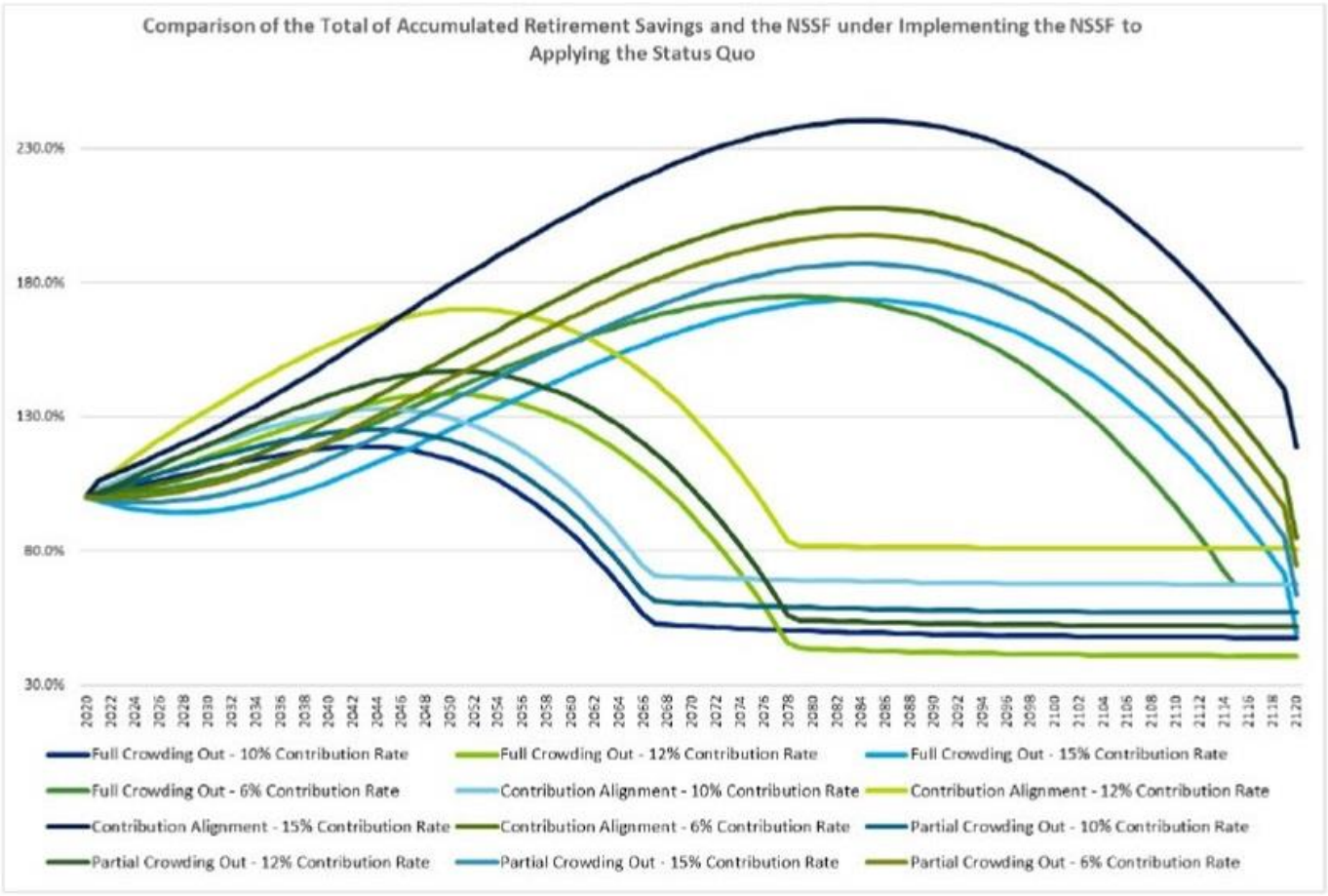
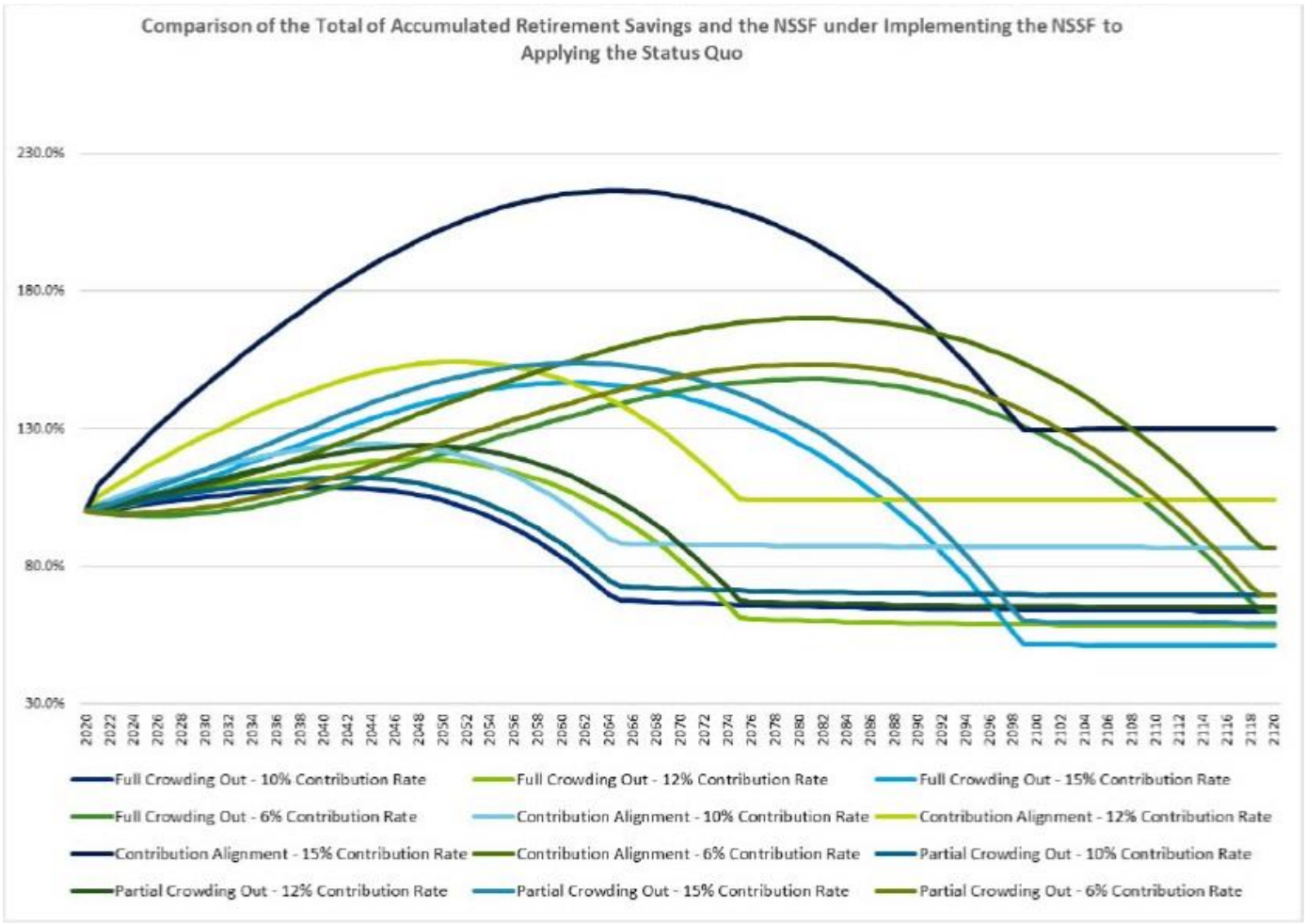


Figure 15: Comparison of the Total of Accumulated Retirement Savings and the NSSF under Implementing the NSSF to Applying the Status Quo (10%, 12%, 15% and 6% NSSF Contribution Rates, Full Crowding Out, NSSF earnings ceiling equal to UIF earnings limit, Conservative Investment Strategy)



Compared to Applying the Status Quo, the level of savings and investments attributed to the retirement system after implementation of the NSSF is expected to increase initially under all scenarios with the exception of a NSSF contribution rate of 6% towards retirement benefits only, where there is projected to be an insignificant decrease over the first ten years after implementation of the NSSF. The level of savings and investments then reaches a peak under the various scenarios and falls below 100% for under all scenarios with the exception of the Contribution Alignment scenario at a NSSF contribution rate of 15% allowing for participation of the formally and informally employed.

The impact of a higher NSSF contribution rate, 12% or 15% compared to 10% of earnings up to the NSSF earnings ceiling, is to increase the level to which accumulated funds build up as a result of higher funding for a fix set of benefits at higher NSSF contribution levels, allowing for larger accumulation of the NSSF before funds are depleted and the NSSF is assumed to move into a pay-as-you-go basis. The Contribution Alignment Scenario (15% NSSF contribution rate) produces the maximum increase in accumulated funds, namely 173.7% in 2067 allowing for formal employment participation only, 240.4% in 2067 allowing for formal and informal employment participation and 216.5% in 2067 allowing for the NSSF earnings ceiling set equal to the UIF earnings limit.

The impact of segregating funding for retirement benefits in the NSSF, allowing for a 6% contribution rate, increases the sustainability of the NSSF and hence, while it does not reach the maximum levels of savings and investment demonstrated under the other contribution rate scenarios, it minimises the drop in the level savings and investment over the 100 period.

The level of NSSF contributions therefore impacts on the level of savings and investments attributed to the retirement system over the period considered. This is as a result of higher funding for a fix set of benefits at higher

NSSF contribution levels, allowing for larger accumulation of the NSSF before funds are depleted and the NSSF is assumed to move into a pay-as-you-go basis.

It is noted that the underlying investment strategy will influence the underlying asset allocation will differ dependent on the investment strategy of the NSSF. Investments under the NSSF may favour debt markets and public sector funding (conservative investment strategy) resulting in reduced level of investment for other asset classes even where the overall level of savings after implementation is expected to increase. This may have a resulting impact on the cost of capital for the private and public sector as discussed in Section **2.8**.

The following tables set out the present value of savings and investments attributed to the retirement system under Applying the Status Quo and Implementing the NSSF allowing for NSSF contribution rates of 10%, 12%, 15% and 6% (retirement benefits only) respectively under the various crowding out scenarios.

Table 41: Present Value of the Total of Accumulated Retirement Savings and the NSSF under Implementing the NSSF compared to Applying the Status Quo under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, Formal Employment, Conservative Investment Strategy)

R' Million	Applying the Status Quo	Full Crowding Out Scenario	Contribution Alignment Scenario	Partial Crowding Out Scenario
10% Contribution Rate	142 785 822	141 370 721	158 621 279	149 055 202
12% Contribution Rate	142 785 822	163 730 643	198 654 311	172 952 016
15% Contribution Rate	142 785 822	224 413 917	284 537 071	235 940 611
6% Contribution Rate	142 785 822	214 296 115	231 546 673	221 980 597

Table 42: Present Value of the Total of Accumulated Retirement Savings and the NSSF under Implementing the NSSF compared to Applying the Status Quo under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, Formal Employment and Informal Employment, Conservative Investment Strategy)

R' Million	Applying the Status Quo	Full Crowding Out Scenario	Contribution Alignment Scenario	Partial Crowding Out Scenario
10% Contribution Rate	142 785 822	197 185 797	214 436 355	204 870 278
12% Contribution Rate	142 785 822	191 451 613	226 375 281	200 672 986
15% Contribution Rate	142 785 822	184 160 516	244 283 669	195 687 209
6% Contribution Rate	142 785 822	249 550 164	266 800 722	257 234 645

Table 43: Present Value of the Total of Accumulated Retirement Savings and the NSSF under Implementing the NSSF compared to Applying the Status Quo under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, NSSF earnings ceiling equal to UIF earnings limit, Conservative Investment Strategy)

R' Million	Applying the Status Quo	Full Crowding Out Scenario	Contribution Alignment Scenario	Partial Crowding Out Scenario
10% Contribution Rate	142 785 822	145 963 263	165 905 196	150 592 945
12% Contribution Rate	142 785 822	163 950 348	203 557 665	169 505 966
15% Contribution Rate	142 785 822	213 476 995	281 858 272	220 421 518
6% Contribution Rate	142 785 822	202 452 201	222 394 135	207 081 884

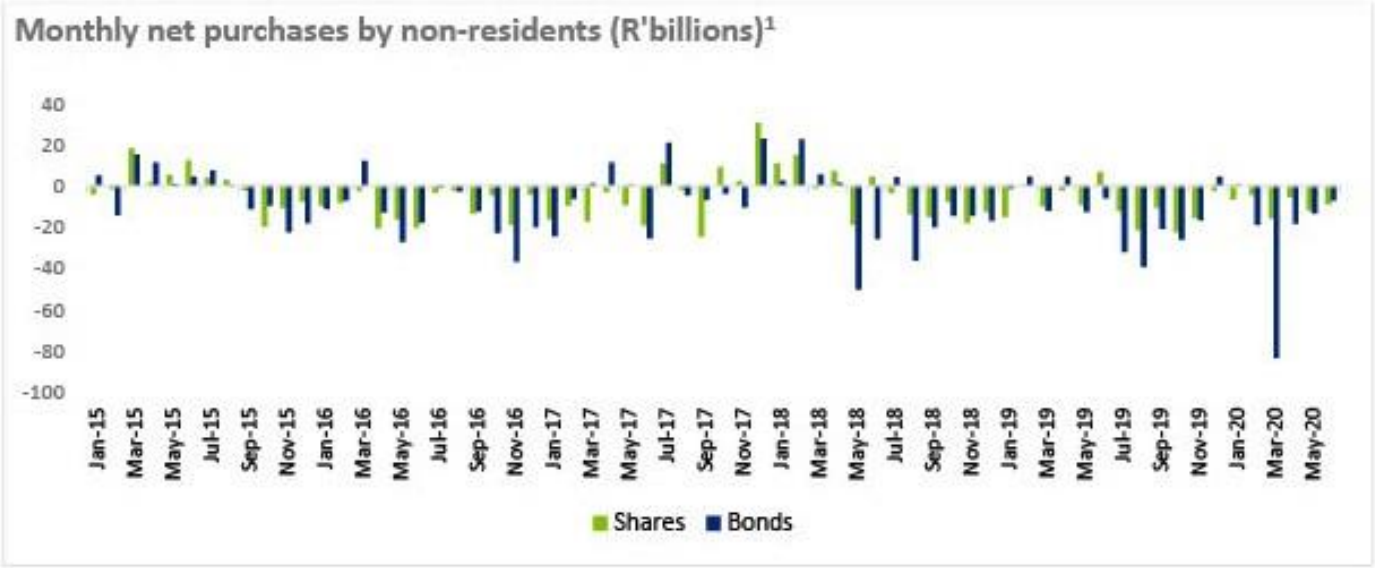
3.7. Analysis of the Projected Impact of the NSSF on Changes in the Financing of Business Investment and in Capital Market Flows

The extent to which the NSSF can support the State's ability to fund new business and infrastructure development will depend on the investment strategy that the Board of Trustees decides on.

Looking back over the last few decades, there has been a steady increase in interest in both South Africa's equity and fixed income markets. Since South Africa became a democracy in 1994, the average monthly size of share purchases has climbed from R1.9bn in 1994 to R74.9bn by 2019[57]. Similarly, the average monthly size of bond purchases has climbed from R1.9bn in 1994 to R214.2bn in 2019. The sharp rise in the size of the transactions also reflects the level of sophistication of South Africa's financial markets. Indeed, the Official Monetary and Financial Institutions Forum (OMFIF) ranked South Africa as number one in Africa for financial market development for a third year running in 2019[58].

Nevertheless, foreign (non-resident) sentiment towards South African financial assets has not enjoyed similar positive growth. Annual net purchases (purchases minus sales) of both shares and bonds by non-residents has been in negative territory since 2015. This trend has not changed in 2020, with net purchases of shares by non-residents totalling R53bn for the first half of the year. Net bond purchases show an even strong descent into negative territory, totalling R141.1bn for the first six months of 2020.

Figure 16: Monthly Net Purchases by Non-Residents



Given reduced sentiment towards South Africa, any reduced demand for South Africa government bonds can be mitigated to some extent by the increased funds available through implementation of the NSSF over the period to 2025, particularly in relation to a conservative investment strategy for the NSSF.

Considering the long-term projections presented in Section **3.6.2**, the overall level of savings and investments attributed to retirement savings under Implementation of the NSSF is expected to surpass the overall level of savings and investments attributed to retirement savings under Applying the Status Quo over at least the next 30 years, with the exception of a NSSF contribution rate of 6% towards retirement benefits only, where there is projected to be an insignificant decrease over the first ten years after implementation of the NSSF. After reaching a maximum level, depending on crowding out scenario and NSSF contribution level, the overall level of savings and investments attributed to retirement savings under Implementation of the NSSF reduces. Under all the scenarios except for the Contribution Alignment Scenario at a NSSF contribution rate of 15%, the level of savings

[57] SARB, Quarterly Bulletin. Available Online: https://www.resbank.co.za/Publications/Detail-Item-View/Pages/Publications.aspx?sarbweb=3b6aa07d-92ab-441f-b7bf-bb7dfb1bedb4&sarblist=21b5222e-7125-4e55-bb65-56fd3333371e&sarbitem=10093

[58] https://www.absa.co.za/content/dam/south-africa/absa/cib/pdf/insights/IA-Africa-financial-markets-index-report-IA-11-Oct.pdf

and investment reduces to less than the overall level of savings and investments attributed to retirement savings under Applying the Status Quo after 30 years. This can be mitigated by increasing NSSF contribution rates at pre-defined milestones over the period considered to maintain a minimum level of the NSSF.

4. CONCLUSION

4.1. Changes in the Flow of Funds Between Households, Financial Intermediaries and Government

Under the various crowding out scenarios, the total of contributions towards the NSSF and retirement savings[59] is either greater or less than contributions towards retirement savings with no implementation of the NSSF. As illustrated below, unless those individuals who are high earners who are currently covered in respect of retirements savings significantly reduce their contributions to retirement (which will be limited by the quasi-mandatory nature of Pillar 3), the implementation of the NSSF is not likely to reduce ongoing contributions to retirement savings. It is noted that this analysis excludes the impact of the NSSF Supplementary Fund that contributions to the NSSF and retirement savings reflected in the graph above are net of administration fees.

Table 44: Total Contributions to Retirement Savings and NSSF under Crowding Out Scenarios (10%, 12% and 15% NSSF Contribution Rates)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate	6% Contribution Rate
Full Crowding Out Scenario	160 541	257 824	422 296	-213 591
Contribution Alignment Scenario	534 900	1 008 389	1 718 623	160 769
Partial Crowding Out Scenario	295 416	419 674	624 608	-78 716
No Crowding Out	934 955	1 134 312	1 433 348	560 824
Applying the Status Quo	-	-	-	-

The corresponding change in the total of projected retirement savings and the NSSF as at 31 December 2025 under the various scenarios assuming contribution rates of 10%, 12%, 15% and 6% (retirement benefits only) respectively to the NSSF and allowing for the alternative investment strategies for the NSSF are set out below.

Table 45: Change in Projected Retirement Savings and NSSF as at 31 December 2025 under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, Formal Employment, Regulation 28 Investment Strategy)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate	6% Contribution Rate
Full Crowding Out Scenario	138 919	231 662	389 323	-226 471
Contribution Alignment Scenario	513 279	982 228	1 685 650	147 889
Partial Crowding Out Scenario	273 794	393 512	591 636	-91 596
No Crowding Out	913 334	1 108 151	1 400 375	547 944
Applying the Status Quo	-	-	-	-

Table 46: Change in Projected Retirement Savings and NSSF as at 31 December 2025 under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates NSSF contribution rates, Formal Employment, Conservative Investment Strategy)

[59] Retirement savings includes approved pension, provident and retirement annuity funds and hence forms part of Pillar 3 of South Africa's proposed social security system.

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate	6% Contribution Rate
Full Crowding Out Scenario	336 194	470 780	691 205	-107 578
Contribution Alignment Scenario	710 554	1 221 345	1 987 532	266 782
Partial Crowding Out Scenario	471 069	632 630	893 517	27 297
No Crowding Out	1 110 609	1 347 268	1 702 257	666 837
Applying the Status Quo	-	-	-	-

Allowing for the participation of informally employed individuals, the change in projected retirement savings and NSSF as at 31 December 2025 is set out below:

Table 47: Change in Projected Retirement Savings and NSSF as at 31 December 2025 under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, Formal Employment and Informal Employment, Regulation 28 Investment Strategy)

R' Million	10% Contribution Rate	12% Contribution Rate	15% ContributionRate	6% Contribution Rate
Full Crowding Out Scenario	336 194	470 780	691 205	- 107 578
Contribution Alignment Scenario	710 554	1 221 345	1 987 532	266 782
Partial Crowding Out Scenario	471 069	632 630	893 517	27 297
No Crowding Out	1 110 609	1 347 268	1 702 257	666 837
Applying the Status Quo	-	-	-	-

Table 48: Change in Projected Retirement Savings and NSSF as at 31 December 2025 under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, Formal Employment and Informal Employment, Conservative Investment Strategy)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate	6% Contribution Rate
Full Crowding Out Scenario	310 499	439 690	652 024	-122 895
Contribution Alignment Scenario	684 858	1 190 256	1 948 352	251 465
Partial Crowding Out Scenario	445 374	601 540	854 337	11 981
No Crowding Out	1 084 913	1 316 179	1 663 077	651 520
Applying the Status Quo	-	-	-	-

Allowing for the NSSF earnings ceiling to be set equal to the current UIF earnings limit, the change in projected retirement savings and NSSF as at 31 December 2025 is set out below:

Table 49: Change in Projected Retirement Savings and NSSF as at 31 December 2025 under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, NSSF earnings ceiling equal to UIF earnings limit, Formal Employment, Regulation 28 Investment Strategy)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate	6% Contribution Rate
Full Crowding Out Scenario	165 123	233 725	349 016	-115 430
Contribution Alignment Scenario	587 097	1 067 919	1 789 151	306 545
Partial Crowding Out Scenario	246 381	331 235	470 903	-34 171
No Crowding Out	700 015	849 277	1 073 170	419 463
Applying the Status Quo	-	-	-	-

Table 50: Change in Projected Retirement Savings and NSSF as at 31 December 2025 under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, NSSF earnings ceiling equal to UIF earnings limit, Formal Employment, Conservative Investment Strategy)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate	6% Contribution Rate
Full Crowding Out Scenario	148 929	214 130	324 318	-125 069
Contribution Alignment Scenario	570 904	1 048 324	1 764 454	296 905
Partial Crowding Out Scenario	230 187	311 640	446 206	-43 811
No Crowding Out	683 821	829 682	1 048 473	409 823
Applying the Status Quo	-	-	-	-

The total of accumulated retirement savings and the NSSF as at 31 December 2025, is lowest under the Full Crowding Out for all scenarios considered considering NSSF contributions as at rate of 10%, 12 %, 15% and 6% (retirement benefits only). In line with the change in total contributions towards the NSSF and retirement savings, allowing for the participation of the informally employed, increases the projected accumulation of the NSSF and retirement savings to a greater extent that setting the NSSF earnings ceiling equal to the UIF earnings limit.

Based on the projected accumulation of retirement savings under the various scenarios, accumulated retirement savings and the NSSF is not expected decrease over the period considered with the exception of a NSSF contribution rate of 6% towards retirement benefits. However over the long term, the segregation of funding for retirement benefits in the NSSF, increases the sustainability of the NSSF over the long term (discussed below).

It is noted that where the level of savings and investments attributed to the retirement system after implementation of the NSSF, compared to Applying the Status Quo, is expected to increase over the period considered, any increase in savings channelled to the retirement system may be offset by decreases in individuals' discretionary savings.

Funds channelled through financial intermediaries are therefore not expected to reduce given the implementation of the NSSF. However, the underlying asset allocation will differ dependent on the investment strategy of the NSSF. In particular, based on the projected asset allocation of funds in 2025, allowing for no implementation of the NSSF, investment in government bonds in projected to reach R 1 697 billion assuming investment in line in asset allocations as at 31 December 2019. Allowing for the implementation of the NSSF with an investment strategy in line with Regulation 28, investment in government bonds is projected to reach R 1 943 billion and investment in South African equities R 3 575 billion under the Full Crowding Out Scenario allowing for NSSF contributions of 15%. Allowing for the implementation of the NSSF with a conservative investment strategy, investment in government bonds is projected to reach R 2 421 billion and investment in South African equities R 3 275 billion under the Full Crowding Out Scenario allowing for NSSF contributions of 15%.

Allowing for alternative crowding out scenarios will increase investment in South African equities and bonds further. If the informally employed participate in the NSSF and the NSSF earnings ceiling is set equal to the UIF earnings limit, projected accumulation of the NSSF and retirement savings is increased further. The resulting investment in South African equities and bonds will therefore increase.

Considering longer term projections, the present value of savings and investments attributed to the retirement system under Implementing the NSSF is maximised allowing for a 15% contribution rate or a 6% contribution rate to retirement benefits only.

Table 51: Present Value of the Total of Accumulated Retirement Savings and the NSSF under Implementing the NSSF compared to Applying the Status Quo under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, Formal Employment, Conservative Investment Strategy)

R' Million	Applying the Status Quo	Full Crowding Out Scenario	Contribution Alignment Scenario	Partial Crowding Out Scenario
10% Contribution Rate	142 785 822	141 370 721	158 621 279	149 055 202
12% Contribution Rate	142 785 822	163 730 643	198 654 311	172 952 016
15% Contribution Rate	142 785 822	224 413 917	284 537 071	235 940 611
6% Contribution Rate	142 785 822	214 296 115	231 546 673	221 980 597

Table 52: Present Value of the Total of Accumulated Retirement Savings and the NSSF under Implementing the NSSF compared to Applying the Status Quo under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, Formal Employment and Informal Employment, Conservative Investment Strategy)

R' Million	Applying the Status Quo	Full Crowding Out Scenario	Contribution Alignment Scenario	Partial Crowding Out Scenario
10% Contribution Rate	142 785 822	197 185 797	214 436 355	204 870 278
12% Contribution Rate	142 785 822	191 451 613	226 375 281	200 672 986
15% Contribution Rate	142 785 822	184 160 516	244 283 669	195 687 209
6% Contribution Rate	142 785 822	249 550 164	266 800 722	257 234 645

Table 53: Present Value of the Total of Accumulated Retirement Savings and the NSSF under Implementing the NSSF compared to Applying the Status Quo under Crowding Out Scenarios (10%, 12%, 15% and 6% NSSF contribution rates, NSSF earnings ceiling equal to UIF earnings limit, Conservative Investment Strategy)

R' Million	Applying the Status Quo	Full Crowding Out Scenario	Contribution Alignment Scenario	Partial Crowding Out Scenario
10% Contribution Rate	142 785 822	145 963 263	165 905 196	150 592 945
12% Contribution Rate	142 785 822	163 950 348	203 557 665	169 505 966
15% Contribution Rate	142 785 822	213 476 995	281 858 272	220 421 518
6% Contribution Rate	142 785 822	202 452 201	222 394 135	207 081 884

Compared to Applying the Status Quo, the level of savings and investments attributed to the retirement system after implementation of the NSSF is expected to increase initially under all scenarios with the exception of a NSSF contribution rate of 6% towards retirement benefits only, where there is projected to be an insignificant decrease over the first ten years after implementation of the NSSF. The level of savings and investments then reaches a

peak under the various scenarios and falls below 100% for under all scenarios with the exception of the Contribution Alignment scenario at a NSSF contribution rate of 15% allowing for participation of the formally and informally employed.

The impact of a higher NSSF contribution rate, 12% or 15% compared to 10% of earnings up to the NSSF earnings ceiling, is to increase the level to which accumulated funds build up as a result of higher funding for a fix set of benefits at higher NSSF contribution levels, allowing for larger accumulation of the NSSF before funds are depleted and the NSSF is assumed to move into a pay-as-you-go basis.

The impact of segregating funding for retirement benefits in the NSSF, allowing for a 6% contribution rate, increases the sustainability of the NSSF and hence, while it does not reach the maximum levels of savings and investment demonstrated under the other contribution rate scenarios, it minimises the drop in the level savings and investment over the 100 period.

The level of NSSF contributions therefore impacts on the level of savings and investments attributed to the retirement system over the period considered. This is as a result of higher funding for a fix set of benefits at higher NSSF contribution levels, allowing for larger accumulation of the NSSF before funds are depleted and the NSSF is assumed to move into a pay-as-you-go basis.

It is noted that the underlying investment strategy will influence the underlying asset allocation will differ dependent on the investment strategy of the NSSF. Investments under the NSSF may favour debt markets and public sector funding (conservative investment strategy) resulting in reduced level of investment for other asset classes even where the overall level of savings after implementation is expected to increase. This may increase the cost of capital for the private sector or increase the cost of equity compared to debt. Increases to the cost of capital for private sector will reduce the demand for investment or change the relative attractiveness of equity versus debt.

4.2. Changes in Consumption, Saving and Investment Behaviour of Households and Firms

Under the Full Crowding Out Scenario, full displacement of contributions due to the NSSF will result in no change in consumption for those covered individuals where current effective contributions rates are higher than the NSSF contribution rate. Where effective contribution rates are lower than the NSSF contribution rate, reduced consumption will be required in respect of these individuals if borrowing is note increased to maintain consumption levels. Therefore, the impact on consumption and borrowing is dependent on the NSSF contribution rate. The table below sets out the reduction in possible consumption resulting from the implementation of the NSSF (assuming no increase in borrowing). This is based on an assumption that employers will meet approximately 60% of the increase in contributions based on an analysis of IRP5 data for the 2017 and 2018 tax years.

Table 54: Full Crowding Out Scenario: Reduction in Consumption by Households Covered in Respect of Retirement Savings on NSSF Implementation (10%, 12% and 15% NSSF contribution rates)

R' million	2020	2021	2022	2023	2024
10% Contribution Rate	8 743	9 152	9 569	10 112	10 696
12% Contribution Rate	14 384	15 075	15 786	16 703	17 673
15% Contribution Rate	24 556	25 550	26 599	28 012	29 516

It is noted that in respect of these individuals it has been assumed that any increases in the absolute value of contributions payable will be met by the individual and not their employer. As per the table above, the reduction in consumption is linked to the level of NSSF contributions. It is noted that the impact of reduced consumption will be more significant for low-income earners, particularly, if a NSSF contribution rate of 15% is implemented. This can be mitigated by transitioning in the requirement for contributions to the NSSF.

Approximately half of formally employed individuals are not covered in respect of retirement savings. The implementation of the NSSF will result in a reduction in consumption for these individuals if borrowing is not increased to maintain consumption levels resulting from the requirement to pay contributions to the NSSF on earnings to the earnings ceiling, if earning above the NSSF earnings floor. The table below sets out the reduction in consumption resulting from the implementation of the NSSF.

Table 55: Reduction in Consumption by Households not Covered in Respect of Retirement Savings on NSSF Implementation (10%, 12% and 15% NSSF contribution rates)

R' million	2020	2021	2022	2023	2024
10% Contribution Rate	27 157	28 314	28 908	29 820	30 760
12% Contribution Rate	32 587	33 977	34 690	35 785	36 911
15% Contribution Rate	40 734	42 472	43 362	44 731	46 139

Given the low coverage rates in respect of retirement savings based on formal employment for low-income earners, the impact of consumption will be most significantly felt by these individuals, given their ability to borrow is limited compared to high-income earners. It is noted that the average earnings of these individuals is R 45 000 in 2021 terms. Half of the contributions due to the NSSF will be met by employers, therefore firms will face increased employment expenditure in line with the figures set out in the table above. This will impact low-income earners more significantly and employment levels. It is therefore proposed that wage subsidies could be implemented to minimise disruptions to the demand of supply of labour associated with the introdsuction of mandatory contributions.

The tables below set out the expected contribution subsidy resulting from the implementation of the NSSF. This has been calculated based on a full subsidy of contributions for those individuals' earnings less than the legislated minimum wage[60] and the SARS tax threshold for comparison purposes.

Table 56: Contribution Subsidy for Individuals Earnings less than the Minimum Wage and not Covered in Respect of Retirement Savings on NSSF Implementation (10%, 12% and 15% NSSF contribution rates)

R' million	2020	2021	2022	2023	2024
10% Contribution Rate	7 828	8 192	8 653	9 236	9 858
12% Contribution Rate	9 394	9 830	10 384	11 084	11 830
15% Contribution Rate	11 742	12 287	12 980	13 854	14 788

[60] Employment and Labour on new National Minimum Wage rate | South African Government (www.gov.za)

Table 57: Contribution Subsidy for Individuals Earnings less than the SARS Tax Threshold and not Covered in Respect of Retirement Savings on NSSF Implementation (10%, 12% and 15% NSSF contribution rates)

R' million	2020	2021	2022	2023	2024
10% Contribution Rate	20 280	21 409	22 616	24 139	25 106
12% Contribution Rate	24 335	25 691	27 139	28 967	30 127
15% Contribution Rate	30 419	32 113	33 924	36 209	37 659

4.3. Changes in the Financing of Business Investment and in Capital Market Flows

The extent to which the NSSF can support the State's ability to fund new business and infrastructure development will depend on the investment strategy that the Board of Trustees decides on.

Given reduced sentiment towards South Africa, any reduced demand for South Africa government bonds can be mitigated to some extent by the increased funds available through implementation of the NSSF over the period to 2025, particularly in relation to a conservative investment strategy for the NSSF.

Considering the long-term projections presented in Section **3.6.2**, the overall level of savings and investments attributed to retirement savings under Implementation of the NSSF is expected to surpass the overall level of savings and investments attributed to retirement savings under Applying the Status Quo over at least the next 30 years, with the exception of a NSSF contribution rate of 6% towards retirement benefits only, where there is projected to be an insignificant decrease over the first ten years after implementation of the NSSF. After reaching a maximum level, depending on crowding out scenario and NSSF contribution level, the overall level of savings and investments attributed to retirement savings under Implementation of the NSSF reduces. Under all of the scenarios except for the Contribution Alignment Scenario at a NSSF contribution rate of 15%, the level of savings and investment reduces to less than the overall level of savings and investments attributed to retirement savings under Applying the Status Quo after 30 years. This can be mitigated by increasing NSSF contribution rates at pre-defined milestones over the period considered to maintain a minimum level of the NSSF.

4.4. Impact on Existing Retirement Funds

The following number of formally employed individuals are expected to be covered in terms of retirement savings over the period 2020 to 2025 allowing for Implementation of the NSSF and the various crowding out scenarios. Coverage has been calculated as the proportion of the formally employed who contribute to retirement savings. It therefore does not allow for individuals who belong to more than one retirement savings vehicle.

Table 58: Covered Formally Employed Individuals from 2020 to 2024 (Base Scenario)

	2020	2021	2022	2023	2024	2025
Full Crowding Out Scenario (10% NSSF Contribution Rate)	5 065 593	5 157 948	5 171 101	5 177 906	5 238 540	5 299 883
Full Crowding Out Scenario (12% NSSF Contribution Rate)	5 065 593	2 448 425	2 466 436	2 488 137	2 538 508	2 602 656
Full Crowding Out Scenario (15% NSSF Contribution Rate)	5 065 593	2 264 970	2 277 717	2 293 517	2 320 374	2 347 549
Contribution Alignment Scenario	5 065 593	2 743 990	2 901 607	2 909 218	2 946 534	2 981 176
Partial Crowding Out Scenario (10% NSSF Contribution Rate)	5 065 593	2 448 425	2 466 436	2 488 137	2 538 508	2 602 656

	2020	2021	2022	2023	2024	2025
Full Crowding Out Scenario (10% NSSF Contribution Rate)	5 065 593	5 157 948	5 171 101	5 177 906	5 238 540	5 299 883
Full Crowding Out Scenario (12% NSSF Contribution Rate)	5 065 593	2 448 425	2 466 436	2 488 137	2 538 508	2 602 656
Full Crowding Out Scenario (15% NSSF Contribution Rate)	5 065 593	2 264 970	2 277 717	2 293 517	2 320 374	2 347 549
Contribution Alignment Scenario	5 065 593	2 743 990	2 901 607	2 909 218	2 946 534	2 981 176
Partial Crowding Out Scenario (12% NSSF Contribution Rate)	5 065 593	2 264 974	2 277 722	2 293 520	2 320 377	2 347 549
Partial Crowding Out Scenario (15% NSSF Contribution Rate)	5 065 593	1 648 468	1 652 672	1 752 543	1 823 804	1 911 498

Over the short-term, the impact on accumulated retirement savings as at 31 December 2025, is highest under the Full Crowding Out Scenario (15% NSSF contribution rate) given this scenario results in the most significant reduction in contributions to retirement savings.

Table 59: Change in Retirement Savings as at 31 December 2025 under Crowding Out Scenarios (10%, 12% and 15% NSSF contribution rates)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate
Full Crowding Out Scenario	774 415	876 488	- 1 011 052
Contribution Alignment Scenario	400 055	125 923	285 275
Partial Crowding Out Scenario	639 540	714 638	-808 740
No Crowding Out			

Allowing for a NSSF earnings ceiling equal to the UIF earnings limit, the corresponding change in retirement savings as at 31 December 2025 under the various scenarios assuming contribution rates of 10%, 12% and 15% respectively to the NSSF is set out below:

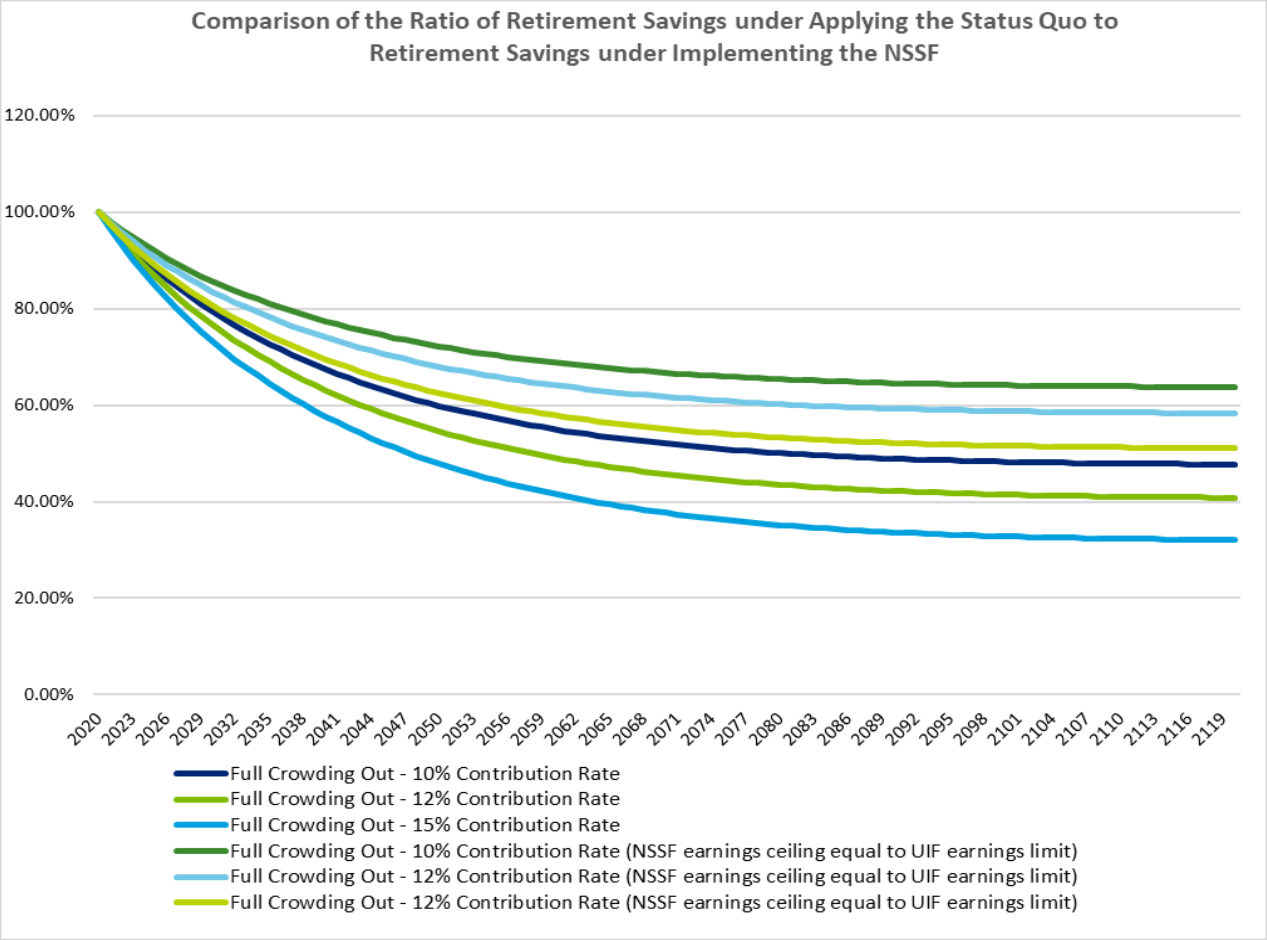
Table 60: Change in Retirement Savings as at 31 December 2025 under Crowding Out Scenarios (10%, 12% and 15% NSSF contribution rates, NSSF earnings ceiling equal to UIF earnings limit)

R' Million	10% Contribution Rate	12% Contribution Rate	15% Contribution Rate
Full Crowding Out Scenario	-534 892	-615 552	-724 154
Contribution Alignment Scenario	-112 918	218 642	715 981
Partial Crowding Out Scenario	-453 634	-518 042	-602 267
No Crowding Out	-	-	-

As noted above, reducing the NSSF earnings ceiling to the current UIF limit reduces the extent to which contributions to retirement savings are crowded out under the various crowding out scenarios hence increases projected retirement savings for all scenarios relative to an NSSF earnings ceiling of R 276 000 in 2018 terms.

Over the long term, the implementation of the NSSF will reduce the accumulation of retirement savings compared to under Applying the Status Quo. The ratio of accumulated retirement savings under Implementing the NSSF to under Applying the Status Quo has been projected over a 100-year period assuming a NSSF contribution rate of 10%, 12% and 15% respectively. This projection has been done under the Full Crowding Out Scenario.

Figure 17: Comparison of the Ratio of Retirement Savings under Applying the Status Quo to Retirement Savings under Implementing the NSSF (10%, 12% and 15% NSSF Contribution Rates)



The reduction in the ratio of accumulated retirement savings under Implementing the NSSF to under Applying the Status Quo is significant over the first 34 years, after which the reduction slows until equilibrium is reached at 48% of accumulated retirement savings under Applying the Status Quo assuming NSSF contributions of 10%, 41% of accumulated retirement savings under Applying the Status Quo assuming NSSF contributions of 12% and 32% of accumulated retirement savings under Applying the Status Quo assuming NSSF contributions of 15%.

If the NSSF earnings ceiling is set equal to the current UIF earnings limit, equilibrium is reached at 64% of accumulated retirement savings under Applying the Status Quo assuming NSSF contributions of 10%, 58% of accumulated retirement savings under Applying the Status Quo assuming NSSF contributions of 12% and 51% of accumulated retirement savings under Applying the Status Quo assuming NSSF contributions of 15%.

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Report 5

Informal Economy Retirement and Risk Benefits



Author: True South Actuaries & Consultants

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Title:	Informal Economy Retirement and Risk Benefits
Date:	November 2020
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ABBREVIATIONS AND ACRONYMS

ACmHPR	African Commission on Human and Peoples' Rights
ARO	African Reclaimers' Organisation
ASSA	Actuarial Society of South Africa
AU	African Union
BSA	Bilateral Social Security Agreements
DC	Defined Contribution
DSD	Department of Social Development
DOSD	Department of Social Development
EET	Exempt contribution - Exempt interest earned - Taxed benefits income tax structure for the scheme
GHS	General Household Survey
ICESCR	International Covenant on Economic, Social and Cultural Rights
IDTT	Inter-Departmental Task Team
IESS	Instituto Ecuatoriano de Seguridad Social
ILO	International Labour Organization
ISSA	International Social Security Agency
JITP	Joburg Informal Traders' Platform
LFS	Labour Force Surveys
MSA	Multilateral Social Security Agreements
NCEUS	National Commission for Enterprises in the Unorganised Sector
NSSF	National Social Security Fund
NTHC	National Trust Holding Company
OHS	Occupational Health and Safety
PAYG	Pay-As-You-Go
RSSB	Rwanda Social Security Board
SADC	Southern African Development Community
SAITA	South African Informal Traders Association
SAPO	South African Post Office
SASEWA	South African Self-Employed Women's Association
SASSA	South African Social Security Agency
SATWO	South African Taxi Workers
SAWPA	South African Waste Pickers Association
UN	United Nations

WIEGO	Women in Informal Employment: Globalizing & Organizing

BACKGROUND

The text that follows describes the scope of the work included in this paper, the intended use of the report and the reliances and limitations to which this paper is subject.

Scope

This report represents the completed output of the project by True South for the Department of Social Development ("the DOSD") to prepare technical inputs into the draft policy paper on the inclusion of informal sector workers into the mandatory retirement system.

The report provides not only a complete set of recommendations, but also the supporting material that assists readers to understand the path to these recommendations. It provides a thorough description of the conceptual framework within which the proposed scheme falls, including a discussion of:

- Constitutional, policy and regulatory considerations;
- International norms and standards concerning design and governance; and
- Lessons that may be learned from developments in other countries in this arena.

The record of the considerations leading to the recommendations set out in the paper also includes:

- Summaries of data analysis;
- Qualitative assessment of working conditions in the informal economy;
- The criteria for evaluating the alternative designs; and
- The process of evaluating alternative benefit designs is set out in the appendices to this paper, along with supporting detail on the modelling and its outputs.

Intended use of this report

This is not a public document. It is intended solely for the use of the intended recipients, those members of the team at the Department of Social Development (DOSD) responsible for developing the policy and recommendations regarding the system of retirement for informal-economy workers.

Reliances and limitations

The analysis described in this report has been undertaken over an extended period, approaching one year in length. While efforts have been made to update descriptions to take into account the most recent developments, this has not always been possible.

- Labour Force Surveys (LFS) are published on a quarterly basis. Surveys up to and including the publication of the first quarter of 2019 have been taken into consideration.
- General Household Surveys (GHS) are published annually. The survey covering the year 2017 has been utilised in preparation of this report.
- Recent international and regional standards, comparative best practice developments and South African legal precedent have been taken into account as far as possible, but some of these are unfolding and the interpretation of emerging evidence may be incomplete.

While errors or contradictions have been avoided as far as possible, such errors may exist. Notwithstanding inputs received from the DOSD or any other parties, the authors retain responsibility for any such errors.

EXECUTIVE SUMMARY

The text that follows provides an outline of the key messages contained in this paper.

Context

South Africa has a highly-regarded framework of social grants and a large private and occupational based pension system covering millions of workers. These workers are not currently required to preserve their savings and many of them cash in their pension accumulation when they change jobs, undermining the security of their provision for old age. Contributing to a pension fund, furthermore, is not mandatory for all workers, so many of them are not covered at all. Policymakers have been giving consideration to the options for a system, including the establishment of a national/public retirement scheme, that more effectively provides for the old age of South Africa's workers. Much of the attention, however, has been on the needs of workers with jobs in the formal economy.

This paper considers the needs of the millions of workers employed or self-employed in the informal economy. A mandatory arrangement, typically with contributions that must be paid every month that are expressed as a percentage of a fixed income, is unlikely to work for this group of workers. Prior research shows that these workers are interested in saving for their old age but that they need an arrangement that recognises the uncertainty of their tenuous present circumstances.

This paper works through a number of options for achieving this and recommends a framework best suited to needs of informal-economy workers. Section **1** provides the context for this work. It explains the policy gap that needs filling, sets out a statement of the problem that is being addressed and defines a number of challenges with the process. The most significant of these challenges is the inadequacy of the available information on this group of workers.

Conceptual framework and guiding principles

There is no single, consistent definition of what the informal economy comprises or, for that matter, who are indicated as informal employees. The absence of a clear and consistent definition is also evident from domestic surveys (such as the GHS and the LFS) and the range of qualitative and quantitative sources in South Africa, reflecting on this matter. Nevertheless, as indicated in Section **2.1** of this paper, the following conclusions can be drawn:

- Some evolution in conceptual understanding is discernible e.g., from "informal sector" to "informal economy".
- It is clear that the informal economy, also in the South African case, would most often include workers who do not work for an identifiable employer in the context of an existing employment relationship, implying therefore that there is no employer who could contribute towards retirement or other social security provisioning for these workers.
- The focus is on workers not covered by current legal protection, neither legally nor factually, especially in social security terms.
- Informal employment is now understood with reference to the employment characteristics of the individual, and not with reference to the size, or nature, of the enterprise.
- Recent conceptual approaches make it clear that informal work/employment is effectively mainstreamed in the notion of "work".
- "Informal employment" and "informal workers" are defined in wide terms, to capture the range of those involved in the informal economy.
- The noticeable conceptual widening is also informed by labour law developments.

Constitutional considerations

Imperatives flowing from the South African Constitution, 1996, have a decisive impact on the design of a contributory arrangement for informal economy workers. It is in particular necessary to appreciate the implications flowing from constitutional values and the fundamental rights most relevant to both contributory and non-contributory social security provisioning for informal economy workers, i.e. the right to access to social security, the right to equality, the right to human dignity and the right to fair labour practices. Given the vulnerable status of informal economy workers, in particular as a result of the insufficient social security support available to them, it could – in the light of the relevant constitutional provisions and developing jurisprudence – be constitutionally expected of government to roll out some kind of comprehensive programme to deal effectively with their plight.

The absence of social security protection and proper policies in this regard would certainly leave the state exposed to major constitutional challenges. Particular care should be taken to ensure that any form of government support (i.e. in the form of a government subsidy) available to formal economy workers in the context of a to-be-established national pension scheme does not discriminate unfairly against informal economy workers, as unequal treatment in this regard would, also in the light of the particularly vulnerable status of informal economy workers, be subject to serious constitutional challenge. These and related matters are discussed in Section **2.2**.

International and regional standards

The South African Constitution affirms the importance of heeding international and regional standards (such as those emanating from the International Labour Organization (ILO), United Nations (UN), African Union (AU) and Southern African Development Community (SADC) instruments), both in terms of the binding nature of instruments that have been ratified by South Africa (such as the UN *International Covenant on Economic, Social and Cultural Rights*) and the obligation to consider even those standards that have not (yet) been ratified by South Africa. International and regional standards confirm the right of all persons and all workers, including informal economy workers, to social security protection, also in relation to retirement.

The primary and overall responsibility to ensure that such protection is available rests on the State. Various modalities for providing social security protection to informal economy workers are indicated in these instruments, including contributory arrangements that are sensitive to the particular context and contributory capacity of informal economy workers. In terms of these standards, when devising appropriate (social security) coverage frameworks for informal economy workers, Governments are required also to consult with representatives of institutions representing the interests of informal economy workers. International and regional standards advise the adoption of an appropriate policy and legal foundation to inform, support and mandate the extension of (contributory) social security to informal workers. Refer for more details to the discussion in Section **2.3**.

Comparative experiences

The experiences of countries that have focused on successfully extending social security coverage to informal economy workers on a contributory basis, indicate the need for a conceptual understanding and an operational framework of social security which transcend traditional approaches and boundaries. It is apparent that such coverage extension modalities are informed by:

- An overall purpose-driven orientation;
- The adoption of a non-standard mix of public and private, contributory and tax-financed interventions;
- Innovative reconceptualisation, in an attempt to widen the conceptual basis of covering informal economy workers;
- Progressive institutional arrangements, comprising among others extension of current contributory arrangements, the development of universal frameworks, and coverage extension on a sector-by-sector basis;
- Flexible design modalities, in relation to contributions and benefits, and criteria for entitlement; and
- Supporting arrangements, with particular reference to communication, consultation and an enabling framework.

As indicated in a recent ILO report, "The extension of social insurance to categories of workers with contributory capacity who were previously not covered, including through entirely or partially subsidizing contributions, is increasingly being used as a means of ensuring protection and fostering formalization." The ILO report highlights, with reference to comparative experiences, that various measures can be considered with a view to achieving basic income security, including the reduction of the cost of affiliation to contributory schemes, the provision of state support in the form of social contribution subsidies, measures to cover all those with contributory capacity, and measures to strengthen labour inspection and law enforcement.[61]

Of particular importance when devising appropriate coverage modalities in the South African context, is the need to consult properly with institutions representative of workers in the informal economy (refer to the list of institutions in Appendix 10). Finally, most of the comparative schemes provide coverage on the basis of defined contribution

[61] ILO (2019c), *Universal social protection for human dignity, social justice and sustainable development* (General Survey concerning the Social Protection Floors Recommendation, 2012 (202), Report of the Committee of Experts on the Application of Conventions and Recommendations) paras 412 & 593.

arrangements, on the assumption that for several reasons defined benefit arrangements entail too much risk to the scheme itself.

Features of targeted membership

Designing and operating a scheme for workers in the informal economy is rendered more challenging by the absence of a systematically-developed data set describing these workers. Information has been gathered from a combination of quantitative sources, notably the quarterly LFSs and annual GHSs, both published by Statistics South Africa (StatsSA), to put together a profile of the workers intended for the scheme. Even less information is available concerning the earnings characteristics of the group. A number of qualitative sources have been utilised for this purpose.

Section 4 describes the process of aggregating data from a number of sources. It is supported by the more detailed descriptions in three appendices, which describe the analysis of LFSs (Appendix 1), GHS information (Appendix 2) and a variety of sources combining qualitative and quantitative insights (Appendix 3). Section 4.3 summarises by proposing a profile of the workers that form the targeted membership of the scheme. That table is repeated at the top of the next page.

Benefit design, operations and financial modelling

Designing a national pension arrangement from scratch is an intrinsically complex process. The variations available in the fundamental benefit structure, combined with a myriad of possibilities in the parameters utilised, renders the problem of optimisation fundamentally intractable. The uncertainty that characterises the demographic attributes of the targeted workers and the extraordinary volatility of their earnings from month to month only adds to the complexity.

Table i:

	Numbers			Percentages			Average income		
	Male	Female	Total	Male	Female	Total	Male	Female	Overall
Agriculture	263 050	13 853	276 904	12.2%	0.8%	7.1%	1 808	1 352	1 785
Community	73 017	219 188	292 205	3.4%	12.6%	7.5%	4 445	3 325	3 605
Construction	394 077	57 335	451 413	18.2%	3.3%	11.6%	2 486	1 860	2 407
Finance	81 551	81 603	163 154	3.8%	4.7%	4.2%	3 892	2 911	3 401
Manufacturing	269 688	29 984	299 672	12.5%	1.7%	7.7%	3 308	2 474	3 224
Mining	116 034	1 173	117 207	5.4%	0.1%	3.0%	4 271	3 195	4 260
Households	409 653	614 866	1 024 519	18.9%	35.4%	26.3%	1 390	1 040	1 180
Transport	211 881	4 327	216 208	9.8%	0.2%	5.5%	3 937	2 945	3 917
Trade	344 996	713 723	1 058 719	15.9%	41.1%	27.1%	2 713	2 030	2 252
	2 163 947	**1 736 053**	**3 900 000**	**100.0%**	**100.0%**	**100.0%**	**2 691**	**1 884**	**2 332**

Sources: Essop & Yu (2008), Altman (2008), Blaauw (2011), BHS (2017) and author calculations.
Notes: Allocations to categories completed using Essop & Yu (2008) and Blaauw (2011). Income figures inferred from Altman (2008), scaled to match total income from BHS (2017)

Three sections of this paper describe the process of developing a benefit design and recommending the supporting operational and governance infrastructure. The benefit design itself is developed in Section 5 but its development is supported by the financial modelling that is described in Section 7. The proposed operational and governance framework is set out in Section 6.

A multi-phase approach has been taken to the problem of designing the scheme considered appropriate to the needs of the workers in South Africa's informal economy. The first part of this process establishes the broad attributes appropriate to the scheme. It does so by:

- Listing the elements of the design that need to be resolved;
- Identifying the alternatives available under each of these elements;
- Establishing a set of criteria for evaluating these alternatives;
- Defining and assessing four prototype designs; and
- Identifying the attributes of each of these designs that might best meet the needs of informal-economy workers.

The prototypes are not considered alternative designs, one of which must be put into place for these workers; they are instead selected in order to assess the attributes of each that might be appropriate.
The second phase of the process utilises the attributes identified in the first phase to put together an appropriate mix of elements. With the use of financial modelling, this is refined into a recommended benefit structure.

The second phase of the process utilises the attributes identified in the first phase to put together an appropriate mix of elements. With the use of financial modelling, this is refined into a recommended benefit structure.

The uncertainty of the demographic and earnings attributes of informal-economy workers is substantial but it is nevertheless outweighed by the corresponding uncertainty of their response to the scheme made available to them under the proposals set out in this paper. For this reason, a simulation approach is taken to the modelling that describes the variability of the possible outcomes rather than attempting to forecast an unknown outcome. All key metrics are available as a median outcome and a spread of possibilities around that median. This helps in the evaluation of possibilities but it assists also in the communication of uncertainty.

Concerns are expressed regarding the limitations of financial modelling as a tool to evaluate the advantages and disadvantages of all of the prototypes considered as part of the initial phase of assessment. The reason for this is that the complexity of trade-offs is not easily evaluated with the use of financial modelling, which can potentially confuse issues as much as it might illuminate them. Instead, a careful qualitative approach has been taken to identifying both the advantages and disadvantages of these approaches with a view to establishing those features of a scheme that would best meet the needs of informal-economy workers. High-level results of the modelling describing the alternatives considered in the first part of the assessment are provided in Appendix 9.

The process of developing and refining the benefit structure, summarised immediately below, is described in Section **5**. The preliminary stages of identifying the criteria for assessment and analysing the four prototypes are described in the supporting material in Appendix 4 and Appendix 5. The fundamentals of the financial modelling appear in Section **7**.

This is also supported by two further descriptions. Appendix 6 describes the methodology and assumptions utilised in the financial modelling, Appendix 7 provides supporting detail and Appendix 8 shows the sensitivity of results to changes in the key scheme parameters.

The table that follows summarises the recommended structure of the scheme.

Table ii:

DESIGN FEATURE	RECOMMENDATIONS
Benefits	
Main categories	
Retirement benefits	The scheme is structured as a DC scheme with smoothed annual performance. The retirement age is the age of eligibility for social old age grants and changes with any changes to that age. Annual returns, net of investment fees, are smoothed over time, using a model that is subject to review from time to time to avoid insolvency risks or an undue build-up of reserves. Annuity rates are guaranteed for one year with notice of change of at least six months. The annuity increases at the rate of price inflation. It includes a five-year guarantee and contingent spouse's benefit, unless waived at the option of the member, who must confirm that they are not married at the time of waiver.

DESIGN FEATURE	RECOMMENDATIONS
Survivor & disability benefits	Survivor benefits on death prior to retirement are payable to surviving spouse(s) and children, for a maximum of two years and age 18 for children, or to age 23 for children that are financially dependent. The income payable to the spouse is one-eighteenth of the total contributions (plus government incentives) received in the three years prior to death. The income to each minor dependent is payable at half of this rate and limited to four recipients. Income received increases by inflation after one year. All contributions paid by the member, plus investment returns, are returned to dependents in the form of a funeral benefit. Disability benefits are payable on total and permanent disability until the scheme retirement age at a rate of one-eighteenth of the total contributions (plus incentives) received over the three years prior to disability plus 10% of this amount payable as a retirement contribution, also attracting government incentives as if it were a normal contribution.
Early access to saving	Contributions paid by members are allocated to a member account, split evenly between an *accessible member account* and a *frozen member account*. The balance of the *accessible member account* is available to the member for up to two withdrawals a year, before, at or after retirement. Incentives received from government are directed to a *subsidy account,* which, together with the balance in the *frozen member account*, is not accessible to members but converts to an income on retirement. The member may direct the scheme to allocate more than half of the member's contribution to the *frozen member account* should they wish to. Notice, once given, may only be altered after one year.
Form of retirement benefit	
Income	All accumulated benefits except those in the *accessible member account* are converted to an annuity on the terms described above. Where the starting monthly income available from retirement is below 25 percent of the social old age grant, the full amount is transferred to the *accessible member account*, where it may be taken as cash at the option of the member.
Cash lump sum	The available lump sum is limited to that portion still left, at the time of retirement, in the *accessible member account*. It may be taken both at and after retirement and it may also be converted to a lifetime annuity on the terms then available to members.
Combination of options	Benefits must be taken primarily as an income, with cash available to the extent that the member account ear-marked for early access still has a positive balance at the time of retirement.
Portability	A legal framework needs to be developed to allow and stipulate conditions for the portability of benefits to other countries, when a member resides in another country. This can also, in addition, be regulated by appropriate bilateral agreements concluded by South Africa. It is recommended that a regulatory framework be developed to inform, facilitate and streamline inter-(public) scheme portability.
Membership and contribution arrangements	Reflecting the flexible nature of the scheme in response to the needs of its members, membership is voluntary and contributions not subject to any rules. Discussion with representative organisations is strongly recommended (see Appendix 10) in order to develop ways to encourage active participation in the scheme.
Contributions	
Formula for contribution level and regularity of contribution payment	Contributions are entirely voluntary, though subject to an administrative minimum of R50. In the absence of any mandate, engagement with representative organisations encouraging and facilitating participation and active contributions is critical. It is not required that regular contributions be made.
Incentives & vesting	
Incentive arrangements and withdrawals	Incentives are considered in four areas: 1) Contribution subsidies provide 100% matching up to a Tier I ceiling, subject to a minimum contribution, of R50 and a 50% match thereafter up to the Tier II ceiling, giving a maximum subsidy of 25% of the social old age grant. 2) Early access to accumulated saving in the accessible member account should be permitted, at or before or after retirement. 3) Other membership incentives should be considered and evaluated with representative organisations (see Appendix 10). These could include access to labour offices and skills-development opportunities. 4) Member contributions are not applied to fund administration costs. Benefit incentives are not provided.
Delivery mechanisms	

DESIGN FEATURE	RECOMMENDATIONS
Administrative backbone	Governance standards must be consistent with best practice in social security arrangements and equivalent to the corresponding norms set by private pension arrangements and corporate governance standards more generally. The scheme is not recommended to fall under the jurisdiction of the Pension Funds Act, but to form part of the social-security regulatory framework. The scheme is recommended as a ring-fenced extension of the NSSF, sharing its operational infrastructure and resources but separately managed and accounted for. The investment of assets may not be conducted directly by the fund, managing conflicts of interest, but could be outsourced either to the Public Investment Corporation, a range of private-sector counterparts, or a combination of the two along the lines of explicit mandates that take into account the specific interests of the members of the scheme. The cost of risk benefits is to be funded from the contributions paid by members. For purposes of good governance, notice of three months must be given of any changes to the share of the contribution payable towards risk benefits. Administration costs are covered directly by government, directly incentivising the provision of an efficient service.
Contribution receipt and benefit payment	The administrative function must facilitate the collection of contributions from members and payments of benefits to members or their beneficiaries in ways that are convenient to their needs. Mobile-money payments and other electronic transaction channels should also be available for payment of contributions and receipt of benefits. Progress updates should be provided to members, in a manner convenient to them, on pertinent features of their accounts such as: • Contributions paid in total; • The allocation of contributions to insurance and saving; • Government contributions received; • Funds available for withdrawal; and • Pension income due if received immediately or projected conservatively to retirement.

Key financial metrics

With limited resources available, it is not easy to provide appropriately for retirement benefits, regarded as the key objective of the scheme, in addition to the corresponding benefits payable on death and disability. The financial modelling preceded on the basis that it would be appropriate to devote 80% of all contributions (including government subsidy) to saving for retirement. Sensitivity tests to changes in the 80% allocation to retirement (see Section **5.2.2** and Appendix 8) describe the significance of the expected impact on the projected retirement benefit of reducing this allocation to funding the retirement benefit.

A key metric for evaluation of the scheme is the starting income in retirement expressed as a percentage of earnings immediately prior to retirement, often referred to as the replacement rate. The table below shows the average replacement ratios projected for women and men at different retirement ages, on the basis of the assumed 80% allocation, together with the spread of values around these. It also shows the corresponding projected ratios were a distinction between male and female mortality regarded as inappropriate under the scheme.

Table iii:

Showing rounded percentages		Unisex	Female	Male
Retirement @ 60	Average expected replacement rate	39%	37%	41%
	90% of observed replacement rates	Between 26% and 54%	Between 24% and 51%	Between 27% and 56%
Retirement @ 65	Average expected replacement rate	54%	51%	55%
	90% of observed replacement rates	Between 34% and 75%	Between 32% and 71%	Between 35% and 78%

Underlying the calculations behind these figures is the assumption that members do not withdraw their accumulated savings prior to retirement. The numbers would be proportionally reduced to the extent that members take advantage of such access.

The benefits available on death and disability are relatively low but considered adequate for the purposes of the scheme, as described in Sections **7.2** and **7.3** (refer to Section **5.2.2** and Appendix 8 for disclosure of the financial impacts of extending these benefits).

The costs of administration are recommended to be borne by government and are summarised, for the first few years of the scheme, as follows (longer-term projections of all of these figures are provided in Appendix 6 and sensitivities to changes in assumptions in Appendix 7.

Table iv:

	2020	2021	2022	2023	2024
Number of pre-retirement member records	92 735	192 464	295 703	402 347	512 054
Number of post-retirement member records	-	3 685	9 245	16 639	25 793
Total number of member records administered	**92 735**	**196 149**	**304 948**	**418 987**	**537 847**
Cost to administer a single member record (R)	300	318	337	357	379
Cost to administer the entire scheme (R'm)	R28m	R62m	R103m	R150m	R204m

These costs are nevertheless expected to be lower than the corresponding cost of providing financial support to members.

It is recommended that this cost is met by addressing the regressive system of tax incentives currently available to formally employed South Africans with high incomes. If a wholesale restructure of the system of tax incentives is not considered feasible at present, then parametric changes could be considered to address the skewed system of government incentives and direct sufficient resources to supporting the system proposed in this study (refer to in Section **5.5**).

Table v:

	2020	2021	2022	2023	2024
Number of pre-retirement member records	92 735	192 464	295 703	402 347	512 054
Number of post-retirement member records	-	3 685	9 245	16 639	25 793
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Cost to administer a single member record (R)	300	318	337	357	379
Cost to administer the entire scheme (R'm)	R28m	R62m	R103m	R150m	R204m

Assets under management are not expected to be particularly large relative to existing retirement funds or the NSSF, but are nevertheless projected to grow rapidly from relatively humble beginnings:

Table vi:

Amounts in R'm	2020	2021	2022	2023	2024
Total contributions (participants + subsidy)	439	944	1 523	2 182	2 931
Less portion going to the risk pool	-88	-189	-305	-436	-586
Amount available for investment	**351**	**755**	**1 218**	**1 746**	**2 345**
Return of contribution to deaths	-2	-11	-29	-66	-110
Capitalised outflow to those who retire	-	-8	-27	-58	-104
Smoothed investment return	13	55	130	245	406
Accumulated assets under management	**R362m**	**R1 153m**	**R2 445m**	**R4 312m**	**R6 848m**

A key metric of the appropriateness of the benefits available on death and disability is the sustainability of the risk pool established for the purposes of providing for these benefits. This pool is funded by 20% of the contributions paid by members and the same proportion of the subsidy provided by government. The probability that this pool remains solvent through the period of the financial projection, 2020-2065, is calculated as 68%. A system of automatic adjustors is recommended in the event that this pool proves inadequate for the benefits ear-marked or if the assets in the pool grow inordinately large.

An analysis of the costs and benefits associated with the scheme is rendered challenging by uncertainty regarding the number of workers in the informal economy, scheme take-up rates and the extent to which these workers already have saving in other arrangements, believed to be very low. Considerable support for this scheme nevertheless exists in the constitutional imperative that support for workers of all types needs to be established on a basis that is fundamentally equitable.

Operational and governance recommendations

Section **6** describes the process of consideration the operational alternatives. A number of alternatives are considered. It is recommended that the scheme under consideration in this study be designed and operated as an extension of the National Social Security Fund (NSSF). There are a number of reasons for this but the most compelling of these are the economies of scale across two arrangements and the large number of workers likely to participate in and contribute to both parts of the intended holistic approach to pension provision. The principles of governance of social security entities that are described in Section **2.4** are reframed in the form of a concrete set of recommendations. These are set out in Section **6.2**.

Care should be taken to ensure the independence of the governance framework. As a minimum, and assuming that the Scheme shares a governance platform with the NSSF, this should be guaranteed by supervisory and directory powers granted to an autonomous Board, whose mandate, powers, functions, rights and obligations are derived from the legislation specifically designed for the NSSF context. The composition of the Board should be tripartite in nature, and with representation of informal economy workers specifically guaranteed, in addition to key experts representing core required professional skills.

It is also recommended that the Board be supervised by and report to an appropriate institution with regulatory powers to direct the Scheme/NSSF on an ongoing basis. Reporting should also be done to Government and the relevant Parliamentary portfolio committees. The Board should delegate key functions to properly mandated and staffed sub-committees that have the required mandate to manage key functions on behalf of the Board (such as in relation to investments) and guided by well-designed policy frameworks.

The Board should also have the power to outsource certain key functions to outside professional service providers where these functions cannot otherwise be adequately provided, for example, managing the assets and investments of the Scheme/NSSF. Furthermore, the Chief Executive Officer and key senior officials of the Scheme/NSSF should be appointed and supervised by the Board. Operations of the Board, its sub-committees as well as the management of the Scheme/NSSF should be underpinned by ongoing monitoring and evaluation and informed by a state-of-the-art underlying information technology platform. Attention should, in particular, be paid to client service, communication, education and training, specifically with a view to ensure that informal economy workers are adequately sensitised and provided with ongoing communication, also in the form of regular member statements.

Next Steps

This is a draft paper for discussion with the DOSD. Once it has been finalised, it needs to be discussed with a wide range of commentators, most importantly with representatives of the workers intended to benefit from this arrangement, who must be carefully consulted.

1. CONTEXT

The discussion that follows provides the background and context to the study described in this report. It covers the following:

- South Africa's social security and retirement funding system
- A brief description of existing studies and policy proposals,
- A summary of the dynamics of the market for informal-economy labour,
- A statement of the problem addressed by the scheme under consideration,
- A set of objectives for the scheme; and
- The key caveats regarding this study and its recommendations.

1.1. Social Security and Retirement Funding in South Africa

As part of a comprehensive social assistance system, South Africa provides a social pension from age 60 on a means-tested basis.[62] The level of the pension is currently R1 700,[63] equivalent to more than three times the food poverty line and twice the lower-bound poverty line.[64]

South Africa does not, however, have a mandatory national pension system and does not require workers to contribute to a private-sector vehicle. Many workers do in fact make contributions to an occupational retirement fund along with their employers. In some instances, these contributions are paid under statutory mandate, for example for employees of government, and in others are a contractual requirement, extending to many workers in the private sector. Participation levels are low, however. Overall, some 28 percent of the labour force (World Bank, 2012)[65] or approximately 16.5 percent of working age employees (World Bank 2012,[66] with StatsSA, 2014)[67] contribute to private-sector retirement vehicles. Coverage of the formally employed work force is particularly low in certain demographic and labour-market segments. Furthermore, informal-economy workers are largely excluded because they do not have access to an occupational scheme and do not find existing alternative arrangements attractive (Genesis, 2008).[68]

Saving in individual arrangements contributes significantly to the long-term assets of mainly middle- and upper-income South Africans, but household saving overall is low, at less than 2% of GDP (South African Reserve Bank, 2018).[69] The effectiveness of the system of retirement savings is undermined by high fees (National Treasury, 2013)[70] and inadequate take up of lifetime annuities at retirement [National Treasury, 2012a].[71] Probably the most important detracting factor, however, apart from the absence of the contribution mandate, is that preservation of accumulated savings until retirement is not compulsory [National Treasury, 2012b].[72] In addition, no provision is made for compulsory transfer of retirement savings if a worker changes employment. Evidence from surveys across the retirement industry suggest that a high proportion of employees resigning from their occupations, where retirement saving is available, access this saving when they leave employment rather than preserving it in their retirement account.

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62 Means testing is applied both to income and assets. An individual failing either of these tests is ineligible for a grant. Source: https://www.gov.za/services/social-benefits-retirement-and-old-age/old-age-pension, accessed 17 January 2019).

63 Source: South African government, https://www.gov.za/services/social-benefits-retirement-and-old-age/old-age-pension, accessed 17 January 2019.

64 Calculated from poverty line data in StatsSA (2018).

65 Word Bank (2012), *South Africa: Policy Note on South Africa's Plan to Introduce a New Pension System*, Human Development Department, Social Protection Unit, Africa Region, June

66 *Ibid*

67 Stats SA (2014), *Quarterly Labour Force Survey: Historical Revisions of the QLFS 2008 to 2013*, Statistics South Africa, February

68 Genesis (2008), *Old-age Saving by Low-income South Africans*, research supported by FinMark Trust and the South African Savings Institute, March

69 South African Reserve Bank (2018), *Quarterly Bulletin: March 2018*, No. 287

70 National Treasury (2013), *Charges in South African Retirement Funds, Technical Discussion Paper A for public comment*, July

71 National Treasury (2012a), Enabling a Better Income in Retirement, Technical Discussion Paper B for public comment, September

72 National Treasury (2012b), Preservation, Portability and Governance for Retirement Funds, Technical Discussion Paper C for public comment, September

Broad rates of financial inclusion are relatively high. FinMark Trust (2018)[73] reports that, in 2017, some 77% of South Adults used formal banking products and a further 8% a formal financial product outside of banking. These figures are part of an upward trend. The corresponding take up of long-term saving products by low-income individuals is low. Research into the motives of members of this group not to save in formal products suggests a high dependence on state provision, a preference for expenditure on children's education or incremental housing materials and a mismatch of product design to need (Genesis, 2008).[74] In short, South Africa's low-income sector has very low propensity to save in financial products for long-term needs.

In an effort to address the shortcomings in South Africa's policy framework policymakers have been evaluating alternatives for providing sustainable contributory retirement funding vehicles to meet the needs of workers. Though studies exist well back into the twentieth century, the key publication in this regard is the output of the so-called Taylor Committee of Inquiry (Committee of Inquiry, 2002),[75] which aimed to define the key features of a comprehensive system of social security for all.

Many of the studies published since then have focused on the needs of employees working in the formal economy. This process culminated in the release of a discussion document and set of recommendations prepared by the Inter-Departmental Task Team (IDTT) responsible for designing a contributory retirement system for all workers (IDTT, 2012).[76] The recommendations of this paper are also focused rather heavily on the needs of formal-economy employees. While the framework proposed for these employees is a comprehensive career-average defined benefit arrangement, the corresponding scheme recommended for those workers employed in the informal economy is a defined contribution arrangement structured on a voluntary basis without incentives to participate.

The DOSD undertook the initiative to propose a framework for a contributory arrangement focused on the needs of workers in the informal economy (DSD, 2014).[77] That paper set out the proposed design and operational framework for such a scheme. This paper assesses and builds on those recommendations.

1.2. Informal-economy Labour Markets

One of the key impediments to the development of policy for the workers operating in South Africa's informal economy is the poor understanding of the size, demographic attributes, working conditions, geographical distribution and income characteristics of this group. It is not an exaggeration to state that no systematic studies of a representative nature of South Africa's informal-economy workers have been undertaken. Some insights are available regarding the size of the group from studies such as the quarterly LFSs and annual GHSs, but even these surveys suffer from inadequate sub-division of workers into those falling into the formal and informal economies and shifts to the definitions used for this purpose. These statistics are supported by a handful of studies that consider various quantitative and qualitative attributes of the many millions of workers falling into this category.

The analysis described in this paper aims to bring together the available information from a range of sources in order to describe, with a degree of hesitancy it may be stated, the group of workers to whom the scheme proposed herein is aimed.

It is nevertheless very important for policymakers to recognise that the information available regarding this group of workers is poor. This means that the uncertainty regarding the potential take-up of the scheme is significant, in turn contributing to uncertain evaluation of the impact and costs of this scheme.

For this reason, one of the key recommendations of the study is that engagement with the workers targeted by this initiative, and with any organisations representing the interests of these workers, be considered a high priority. This too is difficult: since we do not know a great deal about these workers, where they operate or how they survive, engagement with representative organisations is challenging. This paper and its recommendations are

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[73] FinMark Trust (2018), *Financial Inclusion in the SADC Region*

[74] *Ibid*.

[75] Committee of Inquiry (2002), *Transforming the Present – Protecting the Future*, Consolidated Report of the Committee of Inquiry into a Comprehensive System of Social Security for South Africa, chaired by Prof Viviene Taylor, March 2002, with reports of the sub-committees, available at www.sarpn.org/CountryPovertyPapers/SouthAfrica/taylor/

[76] IDTT (2012), *Comprehensive Social Security in South Africa: Discussion Document*, version 11.9, Inter-departmental Task Team in Social Security and Retirement Reform, South African Government, March

[77] DSD (2014), *Department of Social Development: Inclusion of informal workers in the reform of retirement provision in South Africa*, Consolidated Report, prepared by Oxford Policy Management in partnership with Callund Consulting, Government of South Africa

nevertheless hoped to form the bedrock of discussion regarding the needs and aspirations of many millions of workers operating in the informal economy.

1.3. Problem Statement, Objectives and Concerns

The problem statement underpinning this study is proposed as follows:

> A large proportion of South Africa's informally employed have little or no realistic access to effective retirement-saving vehicles. These workers have little reason to be confident in existing options for saving or in those alternatives proposed in existing policy frameworks for mandatory participation, as these arrangements are not designed with the needs of these workers in mind. Focused on the corresponding needs of formal-sector workers, they are not well suited to workers with highly uncertain income who may need access to accumulated saving in the short-term. In this way, millions of workers have been systematically excluded from the retirement-provision infrastructure, both existing and planned, notwithstanding the established fact that such discrimination is inconsistent with South Africa's constitutional framework and imperatives.

The retirement scheme for workers in the informal economy aims to provide a soundly managed alternative to existing arrangements that would incentivise workers to save for old age. The proposed objectives of this initiative are:

- The establishment and management of a scheme targeted at meeting the long-term saving needs of workers operating in the informal economy;
- Complementing the system of old age grants, the proposed National Social Security Fund, other elements of South Africa's social protection framework and the corresponding framework of retirement saving for formally-employed workers; and
- Providing sound administration, value for money, useful communication to members and appropriate incentives for participation.

Proposed markers of success for this scheme are as follows:

- A stipulated minimum number of registered members within 1, 3 and 5 years of launch;
- A stipulated minimum number of members within 1, 3 and 5 years of launch who have contributed at least six times a year in each year since enrollment;
- Strong public enthusiasm for the scheme, as determined by independent polling;
- The support of a stipulated proportion of organisations that represent the interests of informal-economy workers; and
- Streamlined governance and operational arrangements.

The critical caveat regarding the development of the scheme described in this paper is that it rests on an inadequate understanding of the characteristics of the group that it is intended to benefit. This inadequacy is both quantitative and qualitative. First, it is not known with certainty how many workers fall into this category and how many of these work in both the formal and informal economies, over time or simultaneously. Second, it is not known what the most important needs and aspirations of this group might be, and how these needs and aspirations may vary across the members of this heterogeneous group of workers.

Both of these points intensify the importance of intensive, systematic and open-minded consultation with those individuals for which this scheme is design.

2. CONCEPTUAL FRAMEWORK AND GUIDING PRINCIPLES

This chapter starts with a discussion of the conceptual framework underpinning an arrangement focused on the needs of workers in the informal economy. It then builds a normative framework in four stages, covering constitutional considerations, international and regional standards, good governance arrangements and, finally, policy and regulatory considerations, which also considerations of portability.

2.1. Conceptual Framework

The discussion that follows sets out the conceptual background to considerations of definition, discusses the use of definitions by international organisations, identifies differences in legal definitions of countries and sets out a number of points by way of conclusion along with further considerations.

2.1.1. Challenges of definition: Conceptual background

The concept “informal sector” has its origins in a research paper by the ILO conducted in Kenya in 1972. However, this term is fraught with conceptual challenges; it has been suggested by Reynaud (2002: 2) that the term "informal economy" is more appropriate. Reynaud emphasises the difficulties in using the word "sector". He states that it (i.e. the informal economy) can no longer be called a sector "since it covers all sectors and all categories of workers: wage earners, the self-employed, home workers and unpaid family workers, etc."

Both these phrases fail to fully encapsulate the nature of what they are explaining. Activities within the "informal sector" fall into a variety of sectors, often with no similarities, whilst "informal economy" fails to illustrate the significant grey areas between the informal and formal economy.

The more or less general consensus appears to emphasise that, from a legal perspective, informality encapsulates those activities falling de facto or de jure out of the reach of law:

> *"By definition, activities by informal economy workers and units are not covered or insufficiently covered – in law or in practice – by formal arrangements. This means notably that informal economy workers have no access to formal social security associated with employment (social insurance in particular) and to the protection provided by labour laws on working conditions (wages, leaves, working hours, occupational health and safety, etc.)"*[78]

A recent ILO instrument, the ILO Recommendation Concerning the Transition from the Informal to the Formal Economy, 2015 (No. 204), states that, for the purposes of this Recommendation, the term "informal economy":[79]

> *"(a) refers to all economic activities by workers and economic units that are – in law or in practice – not covered or insufficiently covered by formal arrangements; and*
>
> *(b) does not cover illicit activities, in particular the provision of services or the production, sale, possession or use of goods forbidden by law, including the illicit production and trafficking of drugs, the illicit manufacturing of and trafficking in firearms, trafficking in persons, and money laundering, as defined in the relevant international treaties".*

It has therefore been suggested that the informal economy is not "an individual condition but a process of income-generation characterised by one central feature: *it is unregulated by the institutions of society, in a legal and social environment in which similar activities are regulated*."[80]

Particularly influential is the definition adopted by the (ILO-linked) International Conference of Labour Statisticians (ICLS). In 2003 the 17th ICLS moved from an *enterprise-based* to an *employment-based* definition:[81]

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[78] ILO (2008), International Labour Organisation, *Strategies to promote transition to formality in Africa*, Contribution to the joint AU/ILO workshop on the informal economy in Africa, Dakar, 12.

[79] ILO Recommendation Concerning the Transition from the Informal to the Formal Economy, 2015 (No. 204) par I.2

[80] Castells, M & A Portes (1989), "The world underneath: The origins, dynamics, and effects of the informal economy", in Portes, A, M Castells & LA Benton (eds), *The informal economy: Studies in advanced and less developed countries*, Baltimore: John Hopkins University Press 12. Emphasis in the original. See also ILO, 2008: 12.

[81] The ILO-ICLS *Guidelines concerning a statistical definition of informal employment* (17th ICLS, 2003) suggest that the definition of informal employment should be understood to include the following job types:
"(i) own-account workers employed in their own informal sector enterprises;
(ii) employers employed in their own informal sector enterprises;
(iii) contributing family workers, irrespective of whether they work in formal or informal sector enterprises;
(iv) members of informal producers' cooperatives;
(v) employees holding informal jobs (as defined in formal sector enterprises, informal sector enterprises, or as paid domestic workers employed by households;
(vi) own-account workers engaged in the production of goods exclusively for own final use by their household."

> *"Instead of focusing on the formality of the enterprise, an employment-based definition defines informality in relation to the* ***employment characteristics of the individual****.*
> *According to this approach, individuals are considered to be in informal employment if their employment relationship is, in law or in practice, not subject to national labour legislation income taxation, social protection or entitlement to certain employment benefits (advance notice of dismissal, severance pay, paid annual or sick leave, etc.).*[82]

According to the 19th ICLS, 2013, work is defined irrespective of its formal or informal character or the legality of the activity. Informal work/employment has effectively been mainstreamed in the notion of "work". Note should also be taken of the current international debate on the nature and scope of labour law, and the quest for redefinition, prompted by the ever-increasing forms of work. Also, the extensive "work"/"worker"/"workplace" concepts being used in modern occupational health and safety (OHS) laws need to be noted – OHS liability essentially extends to any form of work and invariably no longer requires a specific physical workplace.

Informal employment, which is not restricted to the informal economy, has been described as:

> *"The two main categories of informal employment,* ***wage employment in jobs without social protection and self-employment in unincorporated enterprises****, can be further disaggregated into different categories of employment relationships. Self-employment consists of own-account workers and employers of informal enterprises who hire other workers. The conditions of these two categories are often very different. Wage-employment includes informal employees of both formal and informal firms, subcontracted workers, wage workers for households (domestic workers), and wage workers with no fixed employer (casual day workers)".*[83]

However, there is a vast and growing range of other forms of work that cannot be regarded as either self- or wage-employment. Much of this (informal) work takes place in supply chain contexts, and may not have a relationship with an employer, but at best with a "provider" or "user" of work. Others may be working in the care economy.[84]

It is obvious that the significant variety of informal economy participation and informal work modalities has important policy and design implications for those social security frameworks that are tailor-made to cover and serve those in the informal economy. As noted in a recent contribution on social security for informal economy workers in Latin America: "Their heterogeneity calls for innovative solutions."[85]

2.1.2. Challenges of Definition: Domestic legal systems

The manner in which the informal sector/economy is defined differs. Examples emanating from Tanzania and India can be mentioned:

- Tanzania: *The Social Security (Regulatory Authority) Act* defines "informal sector" as the sector that includes workers who work informally and who do not work in terms of an employment contract or another contract contemplated in the definition of employee.[86]
- India: A broad concept of "worker" is suggested, including both an "employee" (wages required) and a "non-employee" (comprising an "owner-cum worker" or "self-employed worker") (*Draft Labour Code on Social Security & Welfare, 2018*). Also, this draft Code defines "unorganised sector" as "establishments which

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[82] DSD (2014), *Inclusion of informal workers in the reform of retirement provision in South Africa*, Consolidated Report, prepared by Oxford Policy Management in partnership with Callund Consulting, 32.

[83] EC (2012), European Commission, *Empowering people for inclusive growth*: The perspective of the working poor in the informal economy, EC Concept Note – High Level Panel, Brussels, 1-2 (emphasis added). For more information, see Lund, F (2012), 'Work-related social protection for informal workers', *International Social Security Review*, 65 (4), 12-15 and Olivier, M, F Andrianarison & M McLaughlin (2013), *Study on social protection in sub-Saharan Africa: An assessment of existing programmes*, Final report of a study commissioned by the European Commission, 74.

[84] Lund, F & S Srinivas (2000), *Learning from experience: A gendered approach to social protection for workers in the informal economy*, Geneva: ILO, 3.

[85] Ortiz, P A (2019), "Informal and self-employed workers in Latin America: from an excluded category to an example of innovate inclusive measures" in M Westerfeld & M Olivier (eds) *Social Security Outside the Realm of the Employment Contract – Informal Work and Employee-like Workers* (Edward Elgar Publishing Ltd) 158.

[86] *Social Security (Regulatory Authority)* Act, Act 8 of 2008: Section 3.

employ workers, and the number of such workers is less than the threshold; (b) self-employed units; (c) Households that employ domestic workers for carrying out the activities of the household".

In South Africa, the LFS makes use of the following definitions of "informal employment" and "informal sector":[87]

- "**Informal employment** identifies persons who are in precarious employment situations, irrespective of whether or not the entity for which they work is in the formal or informal sector. Persons in informal employment therefore comprise all persons in the informal sector, employees in the formal sector, and persons working in private households who are not entitled to basic benefits such as pension or medical aid contributions from their employer, and who do not have a written contract of employment."
- "**Informal sector**: The informal sector has the following two components: i) Employees working in establishments that employ fewer than five employees, who do not deduct income tax from their salaries/wages; and ii) Employers, own-account workers and persons helping unpaid in their household business who are not registered for either income tax or value-added tax."

In a range of developing countries, labour laws (often with social security consequences) achieve extended protection through a deliberate widening of the employee concept. In Southern Africa, this is true of the labour laws of, among others, South Africa and Swaziland.

2.1.3. Challenges of Definition: Concluding comment

The discussion on the challenges of definition may be summarised as follows:

- Some evolution in conceptual understanding is discernible e.g., from "informal sector" to "informal economy".
- It is clear that the informal economy, also in the South African case, would most often include workers who do work for an identifiable employer in the context of an existing employment relationship, implying therefore that there is no employer who could contribute towards retirement or other social security provisioning for these workers.
- The focus is on workers not covered by current legal protection, neither legally nor factually, especially in social security terms.
- Informal employment is now understood with reference to the employment characteristics of the individual, and not with reference to the size, or nature, of the enterprise.
- Recent conceptual approaches make it clear that informal work/employment is effectively mainstreamed in the notion of "work".
- "Informal employment" and "informal workers" are defined in wide terms, to capture the range of those involved in the informal economy.
- The noticeable conceptual widening is also informed by labour law developments.
- Yet, despite the developments indicated above, there is little consistency, especially at national level, in how these terms are defined.

The absence of clear definition runs like a thread through this study, also in the context of the range of qualitative and quantitative sources indicated below.[88] The absence of reliable information regarding this set of workers that it suggests is reflected in reality. No systematic assessments of the working conditions and income characteristics of the group covered by the scheme set out in this study are available. The analysis described herein rests on the information gleaned from a range of qualitative and quantitative sources.

2.1.4. Challenges of Definitions: Other Considerations

One should be careful to rely on standard classifications in this area; as has been noted: "Informal sector heterogeneity continues to defy easy generalizations." In their 2012 contribution, based on a representative sample from seven capital cities in francophone West Africa, Grimm, Knorringa and Lay commented on the needs experienced by a sizeable group of informal economy entrepreneurs, who generally lack access to capital, insurance and productive infrastructure. Appropriate social protection policy interventions would therefore require

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87 See, e.g., Stats SA (July 2019) *Quarterly Labour Force Survey – Quarter 2: 2019* (Statistical Release P0211) 17.

88 See paras 4.1 and 4.2 below.

addressing these shortcomings, including the provision of insurance to cover important household-related risks, such as health shocks and death.[89]

Also, the borderlines between formal and informal have increasingly become fluid and blurred as formal employment has decreased world-wide, and as people tend to move out of formal into informal and non-traditional employment, and vice versa, more readily than in the past. There is, therefore, both a continuum and a fluidity or mobility between the formal and informal economy.[90] This may make the development of suitable social security responses exceptionally complex.

Different from what the position might be in the so-called developed economies, informal employment is not generally regarded as illegal or irregular in the developing world, but as a standard way of life and income-generation.[91] In fact, as recently noted by a specialist in this area, formality is a survival strategy for many, and its nexus with poverty needs to be appropriately addressed.[92]

2.2. Normative Framework and Guiding Principles: Constitutional Considerations[93]

2.2.1. Constitutional framework supporting social security

Human rights abuses under the previous political dispensation in South Africa necessitated the adoption of a Constitution that would avoid repetition of past injustices, and forge a new culture of accommodation, mutual respect, equality and freedom in South Africa. In one of its first judgments, the Constitutional Court remarked that "the Constitution introduces democracy and equality for the first time in South Africa. It acknowledges a past of intense suffering and injustice, and promises a future of reconciliation and reconstruction . . ."[94]

One of the hallmarks of the 1996 Constitution is therefore constitutionalism. Supreme status has been granted to the Constitution: it is the supreme law of the Republic. Any law or conduct inconsistent with it is invalid and the obligations imposed by it must be fulfilled (Constitution (1996), Section 2). Constitutional supremacy has effectively replaced the notion of parliamentary sovereignty, in terms of which Parliament could enact social security laws which discriminated against various people or groups of people on the basis of race or gender.

Alongside this, and supported by constitutional values such as human dignity and equality, a Bill of Rights has been enacted as part of the Constitution. The significance of the rights contained in the Bill of Rights has been enhanced by a special protection, which has been given to the Bill of Rights in the case of any attempted change to these rights.[95] The state has been given a specific mandate to give effect to these rights. Section 7(2) stipulates of the Constitution provides: "The state must respect, protect, promote and fulfil the rights in the Bill of Rights." Also, an obligation has been imposed upon the courts, tribunals and forums, entrusted with the interpretation of any legislation, to promote the spirit, purport and objects of the Bill of Rights (Constitution, Section 39(2).

For the first time in South Africa's history, the Constitution compels the state to ensure the "progressive realisation" of social security. Section 27 of the Constitution clearly and unambiguously obliges the state to develop a

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89 Grimm, M, P Knorringa & J Lay (2012), *Constrained Gazelles: High potentials in West Africa's informal economy*, Working Paper, no 53, International Institute for Social Studies, 27-28.

90 Barrientos, A & S Barrientos (2002), *Extending social protection to informal workers in the horticulture global value chain* (Social Protection Discussion Paper Series No 0126) World Bank report, Washington DC, 18-19; Fudge, J (2012), "Blurring legal boundaries: Regulating for decent work" in J Fudge, S McCrystal and K Sankaran (eds) *Challenging the legal boundaries of work regulation* (Oxford and Portland, Oregon: Hart Publishing, 7-8.

91 Lund (2012) 13-14.

92 Gomes, A (2019), *Labour law, informality and poverty* (Presentation: Fourth Labour Law Research Network Conference (LLRN), Valparaíso, Chile, 23-25 June 2019).

93 This paragraph relies in part on (an adjusted version) of Olivier, M (2012), "Social security: Framework" in *LAWSA (The Law of South Africa) - Labour Law and Social Security Law* Vol 13, Part 2 (LexisNexis, Durban) paras 42, 44, 45, 88 and Olivier, M (2019a), *Selected constitutional and legal perspectives on social security in South Africa* (included in a Department of Social Development-supported publication, HSRC)(forthcoming).

94 *S v Mhlungu* 1995 3 SA 867 (CC); 1995 7 BCLR 793 (CC) par 111.

95 Section 74(2) signifies enhanced protection accorded to the Bill of Rights, by requiring comprehensive support for its amendment: the amending Bill must be passed by the National Assembly, with a supporting vote of at least two thirds of its members, while at least 6 provinces in the National Council of Provinces must cast a supporting vote.

comprehensive social security system. It affirms the universal right to access to social security, including appropriate social assistance for those unable to support themselves and their dependents (Constitution, Section 27(1)(c) and orders the state to take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of these rights (Constitution, Section 27(2). Other fundamental rights are also important to support the realisation and implementation of this constitutionally protected right to access to social security, as is discussed below. While these rights are not absolute, and are subject to "reasonable and justifiable limitations",[96] the cumulative effect of these rights is the imperative to extend significant protection in particular to those who are currently largely excluded from the purview of both contributory and non-contributory forms of social security, including in particular informal economy workers and most often their dependents, while imposing stringent requirements on public and private providers of social security.

Furthermore, it should also be noted that these rights are capable of enforcement. As has happened in several constitutional cases, the legislature or executive can be ordered to take action or be required to consider and arrange for a more equal distribution of resources. For example, in *Khosa v Minister of Social Development; Mahlaule v Minister of Social Development*[97] government was ordered to make available certain social assistance grants to permanent residents, despite the fact that the legislation required (as a rule) that a person had to be a South African citizen in order to be eligible for these grants. The Constitutional Court is specifically empowered to decide that Parliament, or the President, has failed to comply with a constitutional duty.[98] In addition, the remedies at the disposal of the courts, when they decide upon these issues, are extensive.

How far will the court go? It may require the state to review programmes and policies. In certifying the draft text of the 1996 Constitution the Constitutional Court stressed that the socio-economic rights contained in the Constitution are justiciable, even though the inclusion of the rights may have direct financial and budgetary implications.[99]

The Court remarked (par 77):

> *"It is true that the inclusion of socio-economic rights may result in the courts making orders* ***which have direct implications for budgetary matters****. However, even when a court enforces civil and political rights such as equality, freedom of speech and the right to a fair trial, the order it makes will often have such implications. A court may require the provision of legal aid,* ***or the extension of state benefits to a class of people who formerly were not beneficiaries of such benefits****. In our view it cannot be said that by including socio-economic rights within a bill of rights, a task is conferred upon the courts so different from that ordinarily conferred upon them by a bill of rights that it results in a breach of the separation of powers" (own emphasis).*

The Constitutional Court has subsequently affirmed this position.[100] It is clear, therefore, that the courts *can* enforce social security rights and *can* order state organs to act in a particular way (eg., to extend social security protection to categories of persons who are excluded contrary to the requirements of the Constitution).

Where necessary, the court will also allow a class action to be brought before it, in order to protect the interests of the poor and vulnerable, in particular.[101]

2.2.2. Constitutional pointers for extending contributory social security protection to informal economy workers

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[96] According to section 36(1) of the Constitution, a fundamental right can be limited only in terms of law of general application to the extent that the limitation is reasonable and justifiable in an open and democratic society based on human dignity, equality and freedom, taking into account all relevant factors, including those specifically indicated in section 36.

[97] 2004 6 BCLR 569 (CC).

[98] Section 167(4)(e). See also *Economic Freedom Fighters v Speaker of the National Assembly*; *Democratic Alliance v Speaker of the National Assembly* 2016 (5) BCLR 618 (CC); 2016 (3) SA 580 (CC).

[99] *Ex parte Chairperson of the Constitutional Assembly*: *In re Certification of the Constitution of the RSA*, *1996* 10 BCLR 1253 (CC); 1996 4 SA 744 (CC) paras 76-78.

[100] *Government of the RSA v Grootboom* 2000 11 BCLR 1169 (CC); 2001 1 SA 46 (CC) par 20.

[101] See section 38 of the Constitution; *Permanent Secretary*, *Department of Welfare*, *Eastern Cape Provincial Government v Ngxuza* 2001 10 BCLR 1039 (A); 2001 4 SA 1184 (SCA); and *Mashavha v President of the RSA* 2004 12 BCLR 1243 (CC); *Nkala and Others v Harmony Gold Mining Company Limited and Others* [2016] 3 All SA 233 (GJ); 2016 (7) BCLR 881 (GJ); 2016 (5) SA 240 (GJ).

2.2.2.1. Access to social security, in the light of the right to equality, to human dignity and to fair labour practices

Section 9(1) of the Constitution stipulates that everyone is equal before the law and has the right to equal protection and benefit of the law. Section 9(2) elaborates on this individual entitlement to equality, by providing, firstly, that equality includes the full and equal enjoyment of all rights and freedoms and, secondly, that (in order) to promote the achievement of equality, legislative and other measures designed to protect or advance persons, or categories of persons, disadvantaged by unfair discrimination may be taken. The state, as is the case with any other person, is prohibited from unfairly discriminating directly or indirectly against anyone on one or more grounds; in addition, the Constitution instructs the enactment of national legislation to prevent of prohibit unfair discrimination (Section 9(3) and (4).

What does this imply for extending retirement and other forms of social security protection to informal economy workers, who have historically been excluded from coverage in South Africa? In the seminal judgment of the Constitutional Court (concerning differentiated employer pension contributions in respect of members of Parliament and other office-bearers, favouring those elected since 1994), in *Minister of Finance v Van Heerden*,[102] the court stressed the need to adopt measures that do away with unequal treatment of historically disadvantaged categories of persons. The court held:[103]

> *"However, what is clear is that our Constitution and in particular Section 9 thereof, read as a whole, embraces for good reason a substantive conception of equality inclusive of measures to redress existing inequality. Absent a positive commitment progressively to eradicate socially constructed barriers to equality and to root out systematic or institutionalised under-privilege, the constitutional promise of equality before the law and its equal protection and benefit must, in the context of our country, ring hollow."*[104]

And in a case concerning the need for equality in access to and delivery of social assistance grants, but with obvious implications for State support in relation to contributory social security arrangements for those operating in the informal economy, the Constitutional Court held: "Equality is not only recognized as a fundamental right in both the interim and 1996 Constitutions, but is also a foundational value. To pay, for example, higher old age pensions in Johannesburg in Gauteng than in Bochum in Limpopo, or lower child benefits in Butterworth than in Cape Town, would offend the dignity of people, create different classes of citizenship and divide South Africa into favoured and disfavoured areas."[105]

Also, in *Khosa* v *Minister of Social Development; Mahlaule v Minister of Social Development*[106] the Constitutional Court held that a purposive approach is required to give meaning to the entitlement of "everyone" to the right to access to social security enshrined in Section 27(1)(c) of the Constitution. It found that this notion includes "all people in our country".[107] The court remarked that, where the state argues that resources are not available to pay benefits to everyone entitled under Section 27(1)(c), the criteria for excluding a specific group (in this case permanent residents) must be consistent with the Bill of Rights as a whole.[108] Whatever differentiation is made must be constitutionally valid and cannot be arbitrary, irrational or manifest a naked preference.[109]

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102 [2004] 12 BLLR 1181 (CC); 2004 11 BCLR 1125 (CC); 2004 6 SA 121 (CC).

103 Par 31.

104 See also par 27: "This substantive notion of equality recognises that besides uneven race, class and gender attributes of our society, there are other levels and forms of social differentiation and systematic under-privilege, which still persist. The Constitution enjoins us to dismantle them and to prevent the creation of new patterns of disadvantage. It is therefore incumbent on Courts to scrutinise in each equality claim the situation of the complainants in society; their history and vulnerability; the history, nature and purpose of the discriminatory practice and whether it ameliorates or adds to group disadvantage in real life context, in order to determine its fairness or otherwise in the light of the values of our Constitution. In the assessment of fairness or otherwise a flexible but 'situation sensitive' approach is indispensable because of shifting patterns of hurtful discrimination and stereotypical response in our evolving democratic society."

105 *Mashavha v President of the Republic of South Africa* 2005 2 SA 476 (CC); 2004 12 BCLR 1243 (CC) par 51.

106 2004 6 BCLR 569 (CC).

107 Paras 46-47.

108 Par 53.

109 Par 45.

Human dignity as a fundamental constitutional value[110] as well as a fundamental right[111] contained in the Bill of Rights is closely linked to the right to equality,[112] and plays a very important role with regard to social rights pertaining to the alleviation of poverty, and the equal treatment of those who are historically deprived. As noted by the Constitutional Court in *S* v *Makwanyane*:[113]

> *"The importance of human dignity as founding value of the new Constitution cannot be overemphasized. Recognising a right to dignity is an acknowledgement of the intrinsic worth of human beings: human beings are entitled to be treated as worthy of respect and concern. The right therefore is the foundation of many other rights that are specifically entrenched in the [Bill of Rights]."*

The Constitutional Court remarked, when considering the purpose of providing access to social security to those in need, that: "A society had to attempt to ensure that the basic necessities of life were accessible to all if it was to be a society in which human dignity, freedom and equality were foundational. The right of access to social security, including social assistance, for those unable to support themselves and their dependents was entrenched because society in the RSA valued human beings and wanted to ensure that people were afforded their basic needs."[114]

The Constitution also stipulates that "Everyone has the right to *fair labour practices*" (Constitution, Section 23(1). The non-restrictive scope of the "fair labour practices" notion would clearly include contributory arrangements associated with the social security context of work arrangements. In a recent Constitutional Court judgment, the court opined that this right accrues also to *informal* work arrangements:

> "Contemporary labour trends highlight the need to take a broad view of fair labour practice rights in Section 23(1). Fewer and fewer people are in formal employment; fewer of those in formal employment have union backing and protection. More and more people find themselves in the 'twilight zone' of employment as supposed 'independent contractors' in time-based employment subject to faceless multinational companies who may operate from a web presence. In short, the LRA tabulated the fair labour practice rights of only those enjoying the benefit of *formal employment* – but not otherwise. Though the facts of this case do not involve these considerations, they *provide a compelling basis not to restrict the protection of Section 23 to only those who have contracts of employment*."[115]

2.2.2.2. Constitutional emphasis on addressing vulnerability

The vulnerability of informal economy workers due to a lack of appropriate social security protection is self-evident. In view of this, note should be taken of the specific constitutional focus on addressing the plight of the most vulnerable and desperate in society. In particular, where categories of people belonging to deprived and impoverished communities are marginalised or excluded, and the right infringed is fundamental to their well-being, the Constitutional Court appears to be willing to intervene. This is, in particular, the case where the said communities have been historically marginalised and/or excluded or appear to be particularly vulnerable.

In *Government of the Republic of South Africa* v *Grootboom*[116] the Constitutional Court emphasised that regard must be had to the extent and impact of historical disadvantage, the need to ensure that basic necessities of life are available to all, and the importance of not neglecting particularly vulnerable groups. In *Minister of Health v Treatment Action Campaign* the court emphasised again that "[t]o be reasonable, measures cannot leave out of account the degree and extent of the denial of the right they endeavour to realise. Those whose needs are the most urgent and whose ability to enjoy all rights therefore is most in peril, must not be ignored by the measures aimed at achieving realirealisation of the right".[117] As was said in yet another judgment of the Constitutional Court,

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110 Constitution of the RSA, Sections 1 and 7(1).

111 Section 10 reads as follows: "Everyone has inherent dignity and the right to have their dignity respected and protected."

112 See *Jafta v Schoeman; Van Rooyen v Stolz* 2005 (2) SA 140 (CC), confirming the approach in this regard adopted by the court in *Grootboom* and *Khosa*.

113 1995 3 SA 391 (CC) par 328. See also *Daniels v Scribante* 2017 4 SA 341 (CC) par 2.

114 *Khosa v Minister of Social Development*; *Mahlaule v Minister of Social Development* 2004 (6) SA 505 (CC); 2004 (6) BCLR 569 (CC) 573A (case headnote summary).

115 *Pretorius and Another v Transport Pension Fund and Another* [2018] 7 BLLR 633 (CC); 2018 (7) BCLR 838 (CC); (2018) 39 *ILJ* 1937 (CC); 2019 (2) SA 37 (CC) par 48 (authority omitted; second emphasis added).

116 *Grootboom* par 44; see also par 42.

117 *Treatment Action Campaign* par 68.

in the context of the protection of labour rights, the "Constitution protects the weak, the marginalised, the socially outcast, and the victims of prejudice and stereotyping."[118]

2.2.3. Implications for designing a contributory arrangement for informal economy workers

The implications of the preceding discussion may be summarised as follows:

- In keeping with the Constitutional Court's approach to consider the impact of fundamental rights in a given context from the perspective of the interrelated and interdependent nature of the fundamental rights protected in the Bill of Rights,[119] and in view of the guarantee of important constitutional values, it is necessary to appreciate the implications flowing from in particular the fundamental rights most relevant to both contributory and non-contributory social security provisioning for informal economy workers i.e. the right to access to social security, the right to equality, the right to human dignity and the right to fair labour practices.
- The vulnerability in social security coverage terms of large numbers of informal economy workers flows from several factors. For the most part, contributory retirement provision as well as other existing contributory social security arrangements effectively remain inaccessible to them, legally and factually, because they are not "employees" operating under a "contract of service", and appropriate tailor-made contributory arrangements to address their specific context have not been established. Also, given the strict category-based approach of South African social assistance, whereby protection in the form of social assistance is restricted to certain categories (in particular old-age, disability and childcare grants), and is made subject to an income and assets test,[120] the position is that these workers, as a rule, do not enjoy social security protection.
- Given the vulnerable status of informal economy workers, in particular as a result of the insufficient social security support available to them, it could – in the light of the relevant constitutional provisions and developing jurisprudence – be constitutionally expected of government to roll out some kind of comprehensive programme to deal effectively with their plight. The absence of social security protection and proper policies in this regard would certainly leave the state exposed to major constitutional challenges.[121]
- Particular care should be taken to ensure that any form of government support (i.e. in the form of a government subsidy) available to formal economy workers in the context of a to-be-established national pension scheme does not discriminate unfairly against informal economy workers, as unequal treatment in this regard would, also in the light of the particularly vulnerable status of informal economy workers, be subject to serious constitutional challenge.

2.3. International and Regional Standards

The next part of the discussion considers the implications of international and regional standards on social security provision for workers in the informal economy.

2.3.1. Constitutional reflections on the role and place of international (and regional) social security law

Social security standards have been entrenched in several international and regional instruments. At the international level this rights-based approach is embedded in standards stipulated in instruments of the International Labour Organization (ILO) (in the form of binding Conventions, supplemented by non-binding Recommendations) and the United Nations (UN). In the regional sphere these standards are reflected in

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118 *Hoffmann v South African Airways* 2001 1 SA 1 (CC) para 34.

119 See, among others, *Grootboom* par 53; *Khosa* par 40.

120 Cf the pertinent provisions of the *Social Assistance Act* 13 of 2004, and the attendant regulations.

121 As remarked by the court in *Government of the RSA v Grootboom* 2000 11 BCLR 1169 (CC); 2001 1 SA 46 (CC) par 36: "The poor are particularly vulnerable and their needs require special attention. It is in this context that the relationship between sections 26 and 27 and the other socio-economic rights is most apparent. If under section 27 the state has in place programmes to provide adequate social assistance to those who are otherwise unable to support themselves and their dependents, that would be relevant to the state's obligations in respect of other socio-economic rights."

instruments emanating from among others the African Union (AU) and the Southern African Development Community (SADC). South Africa is a member of all four these organisations.

The South African Constitution contains important provisions regarding the role and importance of international law. The Constitution generally supports an international law-friendly approach. It stipulates that to the extent that South Africa has *ratified* international instruments, it is bound by their standards and provisions (Section 231(1). However, as a rule, any international agreement becomes law in the Republic only when it is enacted into law (i.e. incorporated) by national legislation (Section 231(4). According to the Constitutional Court, incorporation transforms relevant provisions of international agreements into statutory rights and obligations, to be enforced on par with national legislation.[122]

Furthermore, when *interpreting* fundamental rights contained in the Bill of Rights, courts, tribunals and forums have to consider international law. According to the Constitutional Court, the international law referred to includes both binding and non-binding international law i.e. also international instruments not binding on South Africa.[123] This has major implications when courts and other adjudicators consider the interpretation and application of the constitutional rights discussed above as well as other fundamental rights referred to above. Also, there is a constitutional preference for statutory interpretation which is aligned to international law. Section 233 stipulates: "When interpreting any legislation, every court must prefer any reasonable interpretation of the legislation that is consistent with international law over any alternative interpretation that is inconsistent with international law."

South Africa has ratified only a limited number of (older) employment-related social security Conventions of the ILO, including in the areas of unemployment insurance and employment injury benefits.[124] In 2015 South Africa ratified the UN *International Covenant on Economic, Social and Cultural Rights* of 1966. Fundamental rights enshrined in this instrument include the right to social security. South Africa has not yet ratified any of the AU or SADC instruments, which guarantee social security rights – with the exception of the *African Charter on Human and People's Rights*, in respect of which the right to social security, also for informal economy workers, has been indicated as a derivative right.[125]

South African courts, including the Constitutional Court, have often referred to and, where appropriate, relied on international standards embedded in the instruments indicated above, in particular ILO Conventions and UN instruments.

2.3.2. International standards

Older ILO and other international standards paid scant attention to the social security position of informal economy workers. To some extent, lately,[126] this has been changing. In 2012, *ILO Recommendation 202 (National Floors of Social Protection)* made specific reference to the social security plight of these workers. It mentions, as one of the principles to be applied, 'social inclusion including of persons in the informal economy' (paragraph 1(e). Paragraph 15 in turn suggests that '[S]ocial security extension strategies should apply to persons both in the formal and informal economy'.

ILO *Recommendation 204* (2015) (*The transition from the informal to the formal economy*) went further, by affirming that the transition from the informal to the formal economy is essential to achieve inclusive development and to realise decent work for all. Paragraph 18 suggests that ILO members should progressively extend, in law and practice, to all workers in the informal economy, social security, maternity protection, decent working conditions and a minimum wage that takes into account the needs of workers and considers relevant factors, including but not limited to the cost of living and the general level of wages in their country. With particular reference to employment policies, the Recommendation confirms that countries should pay special attention to the needs and circumstances of those in the informal economy and their families (paragraph 19). Coverage of social insurance should progressively be extended to those in the informal economy, and administrative procedures, benefits and

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122 *Glenister v President of the RSA* 2011 3 SA 347 (CC); 2011 7 BCLR 651 (CC) pars 99, 100, 102, 181. See also *Azanian Peoples Organisation* (*AZAPO*) *v President of the RSA* 1996 8 BCLR 1015 (CC); 1996 4 SA 671 (CC) par 26.

123 39(1)(b). See *S v Makwanyane* 1995 (3) SA 391 (CC); 1995 (6) *BCLR* 665 (CC); *Government of RSA v Grootboom* 2000 (11) *BCLR* 1169 (CC). See also *Glenister v President of the RSA* 2011 3 SA 347 (CC); 2011 7 BCLR 651 (CC) par 96.

124 See www.ilo.org.

125 See par **2.3.3** below.

126 But note that not even *ILO Convention 189* (2011) (*Decent Work for Domestic Workers*) includes self-employed domestic workers, as Article 1(b) of the Convention defines a "domestic worker" to mean any person engaged in domestic work within an *employment relationship*.

contributions should be adapted in accordance with the contributory capacity of those in the informal economy (paragraph 20). In relation to the need to consult appropriately with institutions representing the interests of informal economy workers, the Recommendation requires "Consultation with the most representative employers' and *workers' organizations, which should include in their rank, according to national practice, representatives of membership-based representative organizations of workers and economic units in the informal economy*" (emphasis added) (see in particular paragraphs 6, 34, 38 and 39 of the Recommendation).

Specifically within the context of global supply chains, which tend to increasingly rely on informal economy workers, the 2016 ILO *Resolution concerning decent work in global supply chains* highlights the importance of an intervention such as "legislation on responsibility down the chain, sometimes providing for cross-border regulation of supply chains."[127] Even more recently, ILO *Convention 190* (2019) *concerning the elimination of violence and harassment in the world of work* indicates that the Convention applies to all sectors, whether private or public, "both in the formal and informal economy, and whether in urban or rural areas" and protects "persons working irrespective of their contractual status"[128] Article 6 requires, as one of the core principles of the Convention, that "Each Member shall adopt laws, regulations and policies ensuring the right to equality and non-discrimination in employment and occupation, including for women workers, as well as for workers and other persons belonging to one or more vulnerable groups or groups in situations of vulnerability that are disproportionately affected by violence and harassment in the world of work." Article 8(a) in turn expects of ratifying ILO Member States to take appropriate measures to prevent violence and harassment in the world of work, including: "(a) recognizing the important role of public authorities in the case of informal economy workers."

The recent ILO *Centenary Declaration for the Future of Work* (2019) calls upon all ILO Member States to further develop its human-centred approach to the future of work by –

> *"Strengthening the institutions of work to ensure adequate protection of all workers, and reaffirming the continued relevance of the employment relationship as a means of providing certainty and legal protection to workers, while recognizing the extent of informality and the need to ensure effective action to achieve transition to formality. All workers should enjoy adequate protection in accordance with the Decent Work Agenda, taking into account:*
>
> *(i) respect for their fundamental rights;*
> *(ii) an adequate minimum wage, statutory or negotiated;*
> *(iii) maximum limits on working time; and*
> *(iv) safety and health at work."*[129]

Finally, in yet another recent ILO publication, containing a *General Survey concerning Recommendation 202*, the ILO's Committee of Experts on the Application of Conventions and Recommendations emphasised that "while relief and anti-poverty measures provide some form of protection and constitute an essential component of social protection floors in many countries, *securing a life in health and decency for all people requires the establishment of other types of social security measures, such as* tax-funded social assistance and *adapted social insurance mechanisms enshrined in law which are sustainable, rights-based and provide adequate levels of protection*".[130]

UN standards also cover those who work in the informal economy. The UN *International Covenant on Economic, Social and Cultural Rights* (ICESCR 1966) in particular, article 9, is important for informal economy workers for two reasons. Firstly, by far the majority of developing (including African countries, and South Africa as well) have ratified this instrument. Secondly, General Comment No. 19 (on article 9 ICESCR) requires a ratifying country to cover informal economy workers, and expects governments to respect and support social security schemes developed within the informal economy, such as micro-insurance schemes. Despite limited financial capacity, countries should consider lower-cost and alternative schemes to provide for marginalised groups, and they should ensure the progressive inclusion of informal economy workers in social security arrangements.[131]

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[127] ILO (2019a), *Convention concerning the elimination of violence and harassment in the world of work* (Convention 190 of 2019) Article 2(1) and (2) respectively).

[128] ILO (2019b), *Centenary Declaration for the Future of Work* par III (emphasis added).

[129] ILO (2019b), *Centenary Declaration for the Future of Work* par III (emphasis added).

[130] ILO (2019c), *Universal social protection for human dignity, social justice and sustainable development* (General Survey concerning the Social Protection Floors Recommendation, 2012 (202), Report of the Committee of Experts on the Application of Conventions and Recommendations) 89.

[131] UN Committee on Economic, Social and Cultural Rights (CESCR) (2008), *General Comment No. 19: The right to social security (Art. 9 of the Covenant)*, 4 February 2008, E/C.12/GC/19.

In addition to the above, mention should be made of two other foundational UN documents – one older and one more recent – supporting the right of informal economy workers to appropriate social security. The 1948 UN *Declaration of Human Rights* stipulates in Article 22 that –

> *"**Everyone, as a member of society, has the right to social security** and is entitled to realization, through national effort and international co-operation and in accordance with the organization and resources of each State, of the economic, social and cultural rights indispensable for his dignity and the free development of his personality." (emphasis added)*

Article 25(1) in turn emphasises that "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including … *the right to security in the event of* unemployment, sickness, disability, widowhood, *old age* or other lack of livelihood in circumstances beyond his control." (emphasis added) The (2015) UN *Sustainable Development Goals 2030*, building on the premise of ending poverty in all its forms everywhere, and that no one should be left behind, stipulates that countries should "implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable."[132]

2.3.3. Regional (AU and SADC) standards

The foundational human rights instrument of the African Union is the *African Charter on Human and People's Rights* (1982) (also known as the Banjul Charter; ratified by all 55 AU Member States). While the right to social security is not specifically protected in the Charter, nevertheless, as noted by the African Commission on Human and Peoples' Rights (ACmHPR) in its *Principles and Guidelines on the Implementation of Economic, Social and Cultural Rights in the African Charter on Human and Peoples' Rights*, this right can be derived from a joint reading of a number of rights guaranteed under the Charter including (but not limited to) the rights to life, dignity, liberty, work, health, food, protection of the family and the right to the protection of the aged and the disabled, in addition to be strongly affirmed in international law.[133] The ACmHPR stresses that the right to social security imposes, amongst others, the obligation on States parties to take steps to ensure that the social security systems cover those persons working in the informal economy.[134] In fact, in relation to the right to work, it states that it is incumbent upon States parties to "establish a system of social protection and insurance for workers in both the formal and informal sector, including those performing home-based work ….."[135] The premise for pursuing these interpretive approaches seems to be influenced by the fact that the ACmHPR regards workers in the informal sector and in subsistence agriculture as a vulnerable and disadvantaged group.[136]

The 2007 *Code on Social Security in the SADC* acknowledges the right of every person in SADC to social security (article 4.1). SADC Member States are required to provide compulsory coverage, either through public or private mechanisms or through a combination of both. In particular, article 6.5 stipulates that Member States should provide and regulate social insurance mechanisms for the informal sector. Similarly, article 20(e) of the 2014 *SADC Protocol on Employment and Labour* requires of State Parties to adopt a regulatory framework promoting appropriate and adequate social security protection of informal and rural workers, through the provision or recognition of amongst others formal and informal social insurance and micro-insurance mechanisms, universal schemes, social assistance measures, and dedicated savings instruments.

2.3.4. Implications

The implications of these instruments and their accompanying standards, and the responses of South Africa's courts to them, may be summarised as follows:

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132 UN (2015), *Sustainable Development Goals 2030* Target 1.3.

133 African Commission on Human and Peoples 'Rights (2010), *Principles and guidelines on the implementation of economic, social and cultural rights in the African Charter on Human and Peoples' Rights*, par 81.

134 *Ibid*, par 82(l). It is noteworthy that per the African Union Executive Council decision a mandate was given for the development of an additional protocol to the African Charter of Human and People's Rights on the Rights of Citizens to Social Protection and Social Security. The accompanying text of the decision endorses the pursuit of a rights-based approach to social protection and social security for all citizens, aiming at inclusive development that leaves no one behind, through appropriate legal and policy frameworks, complementing the African Charter. See below.

135 *Ibid*, par 59(o). The ACmHPR further indicates that States Parties are expected to adopt and implement a national employment strategy and plan of action based on and addressing the concerns of all workers (in both the formal and informal sectors) and the unemployed: par 59(d).

136 *Ibid*, par 1(e).

- International and regional standards confirm the right of all persons and all workers, including informal economy workers, to social security protection, also in relation to retirement. The primary and overall responsibility to ensure that such protection is available rests on the State.
- Various modalities for providing social security protection to informal economy workers are indicated in these instruments, including contributory arrangements that are sensitive to the particular context and contributory capacity of informal economy workers.
- The South African Constitution affirms the importance of heeding these standards, both in terms of the binding nature of instruments that have been ratified by South Africa (such as the UN *International Covenant on Economic, Social and Cultural Rights*) and the obligation to consider even those standards that have not (yet) been ratified by South Africa.
- In terms of these standards, when devising appropriate (social security) coverage frameworks for informal economy workers, Governments are required to also consult with representatives of institutions representing the interests of informal economy workers.
- International and regional standards advise the adoption of an appropriate policy and legal foundation to inform, support and mandate the extension of (contributory) social security to informal workers.

2.4. Good Governance Arrangements

In the discussion that follows, international and local guidance pertinent to the governance of social security instruments is considered.

2.4.1. Location within the broader South African comprehensive social security framework

The governance arrangements applicable to the scheme for informal economy workers discussed in this document are closely connected to and dependent on two decisions:

- The eventual institutional and governance arrangements decided on for the to-be-established National Social Security Fund (NSSF); and
- The location of the informal economy workers scheme vis-à-vis the NSSF.

The *Comprehensive Social Security in South Africa Discussion Document* (2012) describes the NSSF as being "*created in law*, providing for mandatory contributions and pension, disability and survivor benefits, as well as *administration arrangements, investment of funds, independent actuarial oversight and governance by a board of trustees*." (emphasis added)[137] The *Discussion Document* raises the possibility of establishing a low-cost pension fund running alongside the NSSF and what it refers to as approved funds, and describes this as an administratively simple, low-cost arrangement benefiting self-employed or informal sector workers (at 28). In this section of the report emphasis is placed on highlighting universally applicable governance standards and guidelines applicable to social security fund arrangements.

2.4.2. A principled framework

While there is no uniform precedent, a 2012 IDTT on Social Security Reform institutional framework discussion document remarks that in most countries an autonomous public entity is responsible for the administration of social security, although with widely varying levels of autonomy, and that best-practice governance structures tend to represent key stakeholders affected by social security:[138]

2.4.3. Regional (AU and SADC) standards

The foundational human rights instrument of the African Union is the African Charter on Human and People's Rights (1982) (also known as the Banjul Charter; ratified by all 55 AU Member States). While the right to social security is not specifically protected in the Charter, nevertheless, as noted by the African Commission on Human and Peoples'

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[137] Inter-departmental Task Team in Social Security and Retirement Reform (IDTT) (2012), *Comprehensive Social Security in South Africa Discussion Document* (Version 11.9) (March 2012) 33.

[138] Inter-Departmental Task Team on Social Security and Retirement Reform (IDTT) (2012), *Institutional framework to underpin comprehensive social security in South Africa (Discussion document prepared for the IDTT* (March 2012) 7.

Rights (ACmHPR) in its Principles and Guidelines on the Implementation of Economic, Social and Cultural Rights in the African Charter on Human and Peoples' Rights, this right can be derived from a joint reading of a number of rights guaranteed under the Charter including (but not limited to) the rights to life, dignity, liberty, work, health, food, protection of the family and the right to the protection of the aged and the disabled, in addition to be strongly

> "*The autonomy and representation of public entities are diluted when governments try to retain a strong administrative role and enhanced when those entities are overseen by an independent … Board with an incentive to perform its functions.*"[139]

It has further been suggested that lower-income countries tend to have more government control than higher-income countries.[140] The IDTT document indicates that political interference and poor accountability often lead to the inefficient use of resources and overstaffing within social security institutions, noting:

> "*It is imperative that the executive of social security organisations is held accountable for achieving goals rather than responding to political or private interests and that this is done in the execution of a benchmarked governance model.*"[141]

This, the IDTT document suggests, is by all indications best achieved through autonomous organisations overseen by boards that consist of representatives most affected by the relevant social security programme. In this way, the respective roles of Government and the relevant entity are clearly carved out: Government retains its role in developing and implementing policy, while the entity (e.g. via its board of governance) takes on the operational role.[142]

Traditionally, in sub-Saharan African countries, as remarked by Barbonne and Sanchez (1999), "… the key problem has been the interference of the government in the management of the funds. This interference has been encouraged by institutional designs that give government control of governing boards and the social security administrations."[143] Therefore, in many African countries there are clear indications of excessive state intervention or interference, as also indicated in a seminal ILO publication (2000).[144] Governments often control the composition and appointment of governing boards, as well as social security administrations, the management of funds and investment decisions. Frequently the relevant Minister is empowered by statute to give directions of a general or specific character to the Board. This increases the possibility of political interference and may compromise the independence of the Board.[145] Consequently, as indicated by Barbonne and Sanchez, there is a need to[146]–

- Limit state involvement or direction in among others the management of funds and investment decisions;
- Redefine the role and composition of the managing boards providing administrative and legal autonomy, define clear responsibilities, and introducing oversight and control mechanisms;
- Introduce proper regulatory frameworks to guarantee that resources are well-managed and that the state is kept at arm's length;
- Set up mechanisms to monitor performance;
- Enforce financial controls;

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139 *Ibid*.

140 *Ibid*.

141 *Ibid*, 9.

142 *Ibid*.

143 Barbonne, L & L B Sanchez (1999), "Pensions and social security in sub-Saharan Africa – Issues and options", in *Social Security in Africa: New realities, Thirteenth African Regional Conference*, Accra, 6-9 July 1999 (ISSA (International Social Security Association), Social security documentation, African Series No. 21 p 15 et seq (ISSA, Abidjan); also published as *Africa Region Working Paper Series No. 4*, World Bank, 1999.

144 See Gillion, C *et al* (eds) (2000), *Social security pensions: development and reform* (ILO) 234: "In most African countries where there are social insurance schemes, responsibility for their administration is entrusted by statute to a social security institution, generally a board constituted on a tripartite basis and under the supervision of a general government department. The objective was to separate the financing of social security from the government budget, but the practice has not always corresponded with the intention of the legislation. It has often happened that government, as the political authority, controls the appointment of the board and its chief executive, and also determines a whole range of administrative issues including the flow of funds, which one would ordinarily expect to be delegated to the board or its administrators. This continuing direct involvement is fostered in some countries by the legislation, which fails to create a truly tripartite structure for the board, neglects to define roles and responsibilities and limits the power of appointments to the minister."

145 See also Olivier, M (2006), "Acceptance of Social Security in Africa" in *Proceedings of 15th African International Social Security Association Regional Conference (ISSA)* (Social Security in Africa Series No. 27 Social Security Documentation) (p 39-72).

146 Barbonne & Sanchez.

- Obtain professional and specialised management; and
- Ensure that tailor-made training programmes (induction) for Board members are in place.

2.4.4. Relevant standards

Governance needs to be given top priority by system designers, aimed to provide for and support independent oversight by a Board or similar body. Barbonne and Sanchez provide a number of helpful thoughts in this regard:[147]

> *"On-going social security reform activity all over the world, especially in the pension area, is seeking to grapple with these issues. To do so, reforms have sought to radically overhaul the governance structures. Key elements have been:*
>
> - *redefinition of the role of the state, focusing priorities on the provision of adequate social security frameworks and limiting direct management and financial exposure,*
> - *unbundling the provision of social security services, to facilitate management, increase transparency and facilitate clear assignment of responsibilities,*
> - *redefinition of the role and composition of the managing boards providing administrative and legal autonomy, defining clear responsibilities, and introducing oversight and control mechanisms, …*
> - *introduction of competition, in particular by third party investment managers, into the management of social security reserves, …*
> - *introduction of regulatory frameworks to guarantee that resources are well managed, that the state is kept at arm's length, and that beneficiaries are well informed on funds' performance, [and]*
> - *taking account of the consequences of social security reform on other sectors, like labour and financial markets."*

World-wide, principles of good governance have now been introduced in social security schemes and programmes, and are supported by institutions such as the ILO, the World Bank and ISSA (International Social Security Agency). Good governance principles can be gleaned from several sources. The overall standard is laid down by Article 72(2) of *ILO Convention 102 of 1952* on *Minimum Standards (Social Security)*, which stipulates that a member country "[s]hall accept general responsibility for the *proper administration* of the institutions and services concerned in the application of the Convention." (emphasis added)

Four further sources are of particular assistance with regards to more detailed principles of good governance. The first source is the ISSA *Guidelines on Good Governance* of 2013,[148] which contains guidelines on (A) Good Governance Guidelines for the Board and Management; and (B) Nine Specific Areas in Social Security Administration. The detailed list of comprehensive guidelines provides helpful guidance for embedding good governance principles into social security governance and administration. The second source is an ILO document providing guidance to social security board members regarding governance of social security systems in Africa.[149] The third source concerns the benchmark set by the *Code on Social Security in the SADC* (2007) in this regard. Article 21.1(f) of the Code requires that,

> *"Member States should endeavour to establish proper administrative and regulatory frameworks in order to ensure effective and efficient delivery of social security benefits, in particular – (f) improved monitoring and sound governance structures independent of social security providers to ensure the protection of members, autonomous decision-making and sound investment, among other requirements."*

Of particular interest, fourthly, should be the principles of corporate governance as set out by the King Committee on Corporate Governance, which could also be applied to the governance and management of a social security system. The Corporate Governance Code issued by the committee under the leadership of Mervyn King, now in its fourth iteration, is regarded as the gold standard of corporate governance standards regionally, and also enjoys strong credibility internationally.[150]

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147 Barbonne and Sanchez, p 22 (formatting modified).

148 ISSA (2013), *Guidelines on Good Governance*.

149 ILO (2010), *Governance of Social Security Systems: A Guide for Board Members in Africa*.

150 Institute of Directors in Southern Africa NPC (2016), *King IV Report on Corporate Governance for South Africa*.

The Code defines a set of principles and supporting best practice on corporate governance and management. It applies not only to private profit-making firms, but public-sector and non-profit entities as well, all of whom are expected to apply the principles rigorously or explain any deviation from them. Despite the Code being labelled a Corporate Governance Code, the principles expressed in the King Code are sufficiently general in expression that they can be applied in a wide range of contexts, including the public (and private) social security domain. Also, the range of initiatives to improve governance across the full range of civil and commercial society are converging around a common set of principles.[151]

The following high-level core guidelines embedded in the newly endorsed King IV Code set of principles should in particular be highlighted and may be of direct relevance to the to-be-established informal economy workers scheme. In particular, the to-be-adopted apex governing structure is enjoined to:

- Lead ethically and effectively;
- Govern the ethics of the organisation in a way that supports the establishment of an ethical culture;
- Ensure that the organisation is and is seen to be a responsible corporate citizen;
- Appreciate that the organisation's core purpose, its risks and opportunities, strategy, business model, performance and sustainable development are all inseparable elements of the value creation process;
- Ensure that reports issued by the organisation enable stakeholders to make informed assessments of the organisation's performance and its short, medium and long-term prospects;
- Serve as the focal point and custodian of corporate governance in the organisation;
- Comprise the appropriate balance of knowledge, skills, experience, diversity and independence for it to discharge its governance role and responsibilities objectively and effectively;
- Ensure that its arrangements for delegation within its own structures promote independent judgement, and assist with balance of power and the effective discharge of its duties;
- Ensure that the evaluation of its own performance and that of its committees, its chair and its individual members, support continued improvement in its performance and effectiveness;
- Ensure that the appointment of, and delegation to, management contribute to role clarity and the effective exercise of authority and responsibilities;
- Govern risk in a way that supports the organisation in setting and achieving its strategic objectives;
- Govern technology and information in a way that supports the organisation setting and achieving its strategic objectives;
- Govern compliance with applicable laws and adopted, non-binding rules, codes and standards in a way that supports the organisation being ethical and a good corporate citizen;
- Ensure that the organisation remunerates fairly, responsibly and transparently so as to promote the achievement of strategic objectives and positive outcomes in the short, medium and long-term;
- Ensure that assurance services and functions enable an effective control environment, and that these support the integrity of information for internal decision-making and of the organisation’s external reports;
- In the execution of its governance role and responsibilities, adopt a stakeholder-inclusive approach that balances the needs, interests and expectations of material stakeholders in the best interests of the organisation over time; and
- Ensure that responsible investment is practised by the organisation to promote the good governance and the creation of value by the companies in which it invests.

The principles underpinning governance of the proposed scheme are briefly set out in Section **6.2**, in the context of operational alternatives, but any design must pay due regard to the details set out in this discussion.

2.5. Policy and Regulatory Considerations, including Portability Arrangements

The discussion turns now to questions of policy and regulation, with specific reference to provisions to ensure portability of accrued pension rights.

[151] Two examples of these initiatives not yet mentioned are the guidelines for pension fund governance published by the Organisation for Economic Cooperation and Development and the corresponding South African standard expected of pension fund trustees referred to as PF130.

2.5.1. Policy and regulatory considerations[152]

As indicated above, international law strongly supports the adoption of an appropriate policy framework, underpinned by a legal framework, for the adoption of interventions aimed at extending social security coverage to informal economy workers.[153]

The need for a *policy-based programme and legislative implementation* also appears to be required from a South African constitutional perspective.[154] The Constitution requires, within the resources available, the devising, formulation, funding and implementing, as well as the constant review, of a comprehensive and co-ordinated programme with well-targeted policies. These policies have to be reasonable both in their conception and their implementation, and must indeed be implemented by the executive and through legislative intervention.[155] There is, generally speaking, no prescribed policy formula, as a range of reasonable measures is at the disposal of government and the legislature: As long as the measures aimed at developing the social security system are reasonable in their conception and implementation, the courts will not consider whether other more desirable or favourable measures could have been adopted or whether public money could have been better spent.[156] A wide range of available options may, therefore, be considered and adopted by the state. The measures adopted may differentiate on the basis of past exclusion and disadvantage, and on the basis of socio-economic status and social realities, as long as they do not infringe the right to equality.

However, constitutionally speaking, it is also evident that sufficient budgetary support is required: While courts will be hesitant to interfere in budgetary provision in the area of social security, the Constitutional Court indicated in its certification judgment, as noted above, that courts may grant orders which may have budgetary implications. In *Government of the Republic of South Africa v Grootboom* the court stressed that – within the context of the right to access to housing – effective implementation requires at least *adequate budgetary support by national government*.[157] The court emphasised that it is essential that a *reasonable part of the national (housing) budget* be devoted to granting relief to those in desperate need, but that the precise allocation is for national government to decide in the first instance.[158] The Constitutional Court also emphasised that guidelines drawn up against the backdrop of budget constraints have to be *reasonable*.[159] The Constitutional Court has stressed that Section 27(2) of the Constitution imposes a positive obligation upon the state "to devise a comprehensive and workable plan to meet its obligations in terms of the subsection."[160] However, according to the formulation of the provision, this is a qualified obligation, namely to "(a) take reasonable legislative and other measures; (b) to achieve the progressive realisation of the right; and (c) *within available resources*." And yet, as stressed by the Constitutional Court in the *Khosa* judgment (a case concerning the extension of social assistance grants to permanent residents), the availability of financial resources must be weighed up against the very fundamental rights affected by the exclusion of non-citizens, including the issue of discriminatory treatment. The Court remarked:[161]

> *"[44] When the rights to life, dignity and equality are implicated in cases dealing with socio-economic rights, they have to be taken into account along with the availability of human and financial resources in determining whether the state has complied with the constitutional standard of reasonableness. This is, however, not a closed list and all relevant factors have to be taken into account in this exercise. What is relevant may vary from case to case depending on the particular facts and circumstances. What makes this case different to other cases that have previously been considered by this Court is that, in addition to the rights to life and dignity, the social-security scheme put in place by the state to*

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[152] This paragraph relies in part on (an adjusted version) of Olivier, M (2012), "Social security: Framework" in *LAWSA (The Law of South Africa) - Labour Law and Social Security Law* Vol 13, Part 2 (LexisNexis, Durban) and Olivier, M (2019a), *Selected constitutional and legal perspectives on social security in South Africa* (included in a Department of Social Development-supported publication, HSRC)(forthcoming).

[153] See paras 2.3.2, 2.3.3 and 2.3.4 above.

[154] See also Section 27(2) of the Constitution, which requires the adoption of reasonable legislative and other measures by the state, within its available resources, to achieve the progressive realisation of the right to access to social security.

[155] *Government of the RSA v Grootboom* 2000 11 BCLR 1169 (CC); 2001 1 SA 46 (CC) par 42.

[156] *Ibid*, par 41.

[157] *Ibid*, par 68.

[158] *Ibid*, par 66.

[159] *Soobramoney v Minister of Health*, *KwaZulu-Natal* [1998] 1 All SA 268 (CC); 1997 12 BCLR 1696 (CC); 1998 1 SA 765 (CC) par 25.

[160] *Grootboom*, par 38.

[161] *Khosa v Minister of Social Development*; *Mahlaule v Minister of Social Development* 2004 (6) SA 505 (CC); 2004 (6) BCLR 569 (CC) paras 44 and 45.

meet its obligations under Section 27 of the Constitution raises the question of the prohibition of unfair discrimination."

"[45] It is also important to realise that even where the state may be able to justify not paying benefits to everyone who is entitled to those benefits under Section 27 on the grounds that to do so would be unaffordable, the criteria upon which they choose to limit the payment of those benefits (in this case citizenship) must be consistent with the Bill of Rights as a whole. Thus if the means chosen by the legislature to give effect to the state's positive obligation under Section 27 unreasonably limits other constitutional rights, that too must be taken into account."

Regarding the adoption of a suitable legal framework for introducing an informal economy-specific contributory social security arrangement, it is submitted that the current key regulatory framework for retirement fund arrangements in South Africa, i.e. the *Pension Funds Act 24 of 1956*, does not suffice for this purpose. The main reason is that the intended arrangement is essentially a public or national scheme that would have to operate on the basis of specific design, institutional, operational and entitlement modalities that need to be prescribed in appropriate detail in a regulatory instrument. For this reason, it is recommended that the legal framework for this arrangement be collapsed into the relevant framework to be created for the envisaged NSSF, especially if the intended arrangement is meant to be integrated into the NSSF framework. Should this not be the case, it is recommended that separate legislation, supported by implementing regulations, be developed to provide the legal framework for the informal economy-specific contributory social security arrangement.

2.5.2. Portability arrangements

For purposes of this report, portability of retirement savings/benefits need to be addressed in relation to two domains, portability between schemes/retirement arrangements in South Africa; and portability across borders.

2.5.2.1. Inter-scheme portability

Of relevance here is the possibility that an informal economy worker who has contributed to the dedicated scheme/arrangement envisaged by this report, has moved to the formal economy, and may therefore have to participate in the specific scheme/arrangement set up for formal economy workers, or vice versa. Portability under these circumstances would imply portability *between two public or national schemes/arrangements*. This is, at least in principle, feasible, in particular if a shared administrative platform is employed for both schemes/arrangements. Portability involving a private retirement arrangement would be more problematic to provide for, and should be addressed with caution, as far as portability from the informal economy-dedicated national/public scheme/arrangement to a private scheme/arrangement is concerned, as this may impact on the overall viability of the public arrangement. Also, constructing an inter-public scheme portability modality should be mindful of the fact that many workers often move between the formal and informal economy and could, at times, even participate in both over the same period.

It is recommended that a regulatory framework be developed to inform, facilitate and streamline inter-(public) scheme portability. Ideally this framework should be informed by a clear policy statement. The current provision regulating aspects of inter-scheme portability in the private and occupational environment, i.e. Section 14 of the *Pension Funds Act* 24 of 1956, is for a variety of reasons not sufficient. Firstly, it is not premised on the specialised arrangements that would be applicable to public scheme environments. Secondly, it covers only a limited range of substantive matters that would be relevant to a public scheme environment, and focuses for most part on the procedure to be followed in the event of inter-scheme transfers.

2.5.2.2. Cross-border portability[162]

Cross-border portability of social security savings/benefits is associated with cross-border movement of workers. This can be arranged for on either a bilateral/multilateral or a unilateral basis. Therefore, *portability* of social security savings/benefits must be distinguished from *exportability*. Exportability requires no bilateral/multilateral

[162] See, for a more elaborate treatment of this issue, Olivier, M (2019d), "Portability of Social Security for Migrant Workers in Asia" in ABDI-ILO-OECD *Building Partnerships for Effectively Managing Labor Migration – Lessons from Asian Countries* (Asian Development Bank Institute, Organisation for Economic Co-operation and Development, and International Labour Organization) 38-69 – https://www.adb.org/publications/building-partnerships-effectively-managing-labor-migration, accessed on 2 August 2019.

cooperation, as the social security institution (supported by the legal framework) of one country alone determines eligibility and the level of benefit, and whether the benefit is payable (i.e. exportable) to other countries.[163]

In its simplest form, cross-border portability could be restricted to the mere transfer of social security savings/benefits. Often, however, portability is accompanied by several other arrangements, aimed to benefit the affected individual. These arrangements, known as social security coordination principles, are ideally contained in bilateral social security agreements (BSAs), and at times also informed/supported by overarching multilateral social security agreements (MSAs). These principles entail:

- The choice of law principle, identifying the legal system that is applicable;
- Equal treatment (in the sense that discrimination based on nationality is prohibited);
- Aggregation/totalization of insurance periods (in that all periods taken into account by the various national laws are aggregated for the purposes of acquiring and maintaining an entitlement to benefits, and of calculating such benefits);
- Maintenance of acquired benefits (benefits built up by the person are retained);
- Payment of benefits, irrespective of the country in which the beneficiary resides (the "portability" principle);
- Administrative cooperation (between the social security institutions of the parties to the agreement); and
- Sharing of liability to pay for the benefit (i.e., pro-rata liability of the respective institutions).

BSAs constitute universal worldwide best practice, especially if supported by an overarching multilateral agreement.[164] In fact, in the absence of an agreement, a person may not be covered under the social security system of either the host country or country of origin, or may be doubly covered. Coordination arrangements help to resolve this problem.

BSAs are strongly advocated for in *international* instruments. The first global Convention, which calls upon countries to enter into BSAs, is an ILO Convention widely ratified by African countries (including South Africa), i.e. ILO *Equality of Treatment (Accident Compensation) Convention*, 1925 (No. 19).[165] ILO *Equality of Treatment (Social Security) Convention*, 1962 (No. 118) covers the equality of treatment and portability of benefits principles indicated above, while ILO *Maintenance of Social Security Rights Convention*, 1982 (No. 157) provides for totalisation of insurance periods and the pro-rated sharing of benefit payments by the countries concerned, based on the ratio of insurance periods. Of particular importance – and assistance – are the ILO model provisions for the conclusion of social security agreements, contained in the relevant annexes to the ILO *Maintenance of Social Security Rights* Recommendation, 1983 (No. 167).

Several African regional (AU and SADC) instruments also support portability of social security benefits, ideally to be provided for in bilateral and multilateral arrangements. Some of the key instruments are:

- AU *Protocol on Free Movement of Persons, the Right to Residence and the Right of Establishment* (2018) – Article 19
- AU *Draft Protocol to the African Charter on Human and Peoples' Rights on the Rights of Citizens to Social Protection and Social Security* (2019) – Article 3
- SADC *Protocol on Employment and Labour* (2014) – Article 19(f)
- SADC *Portability of Accrued Social Security Benefits within the Region* (2016) – Article 3

There are not currently many examples in the world where BSAs or MSAs provide for portability of retirement benefits of informal economy workers. It would appear that a 2002 BSA between Chile and Peru has been formulated in a way that captures a wide notion of the term "pension", covers both employed and self-employed workers, defines "protected people" quite widely, and includes both compulsory and voluntary contributions.[166]

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[163] Sabates-Wheeler, R and J Koettl (2010), "Social protection for migrants: The challenges of delivery in the context of changing migration flows". *International Social Security Review*, Vol. 63, Nos. 3-4, pp. 115-44.

[164] See Holzmann, R, J Koettl & T Chernetsky (2005), *Portability regimes of pension and health care benefits for international migrants: An analysis of issues and good practices*, Social Protection Discussion Paper No. 0519. Washington DC: World Bank, p. 32), who remark: "The administrative approach to achieve the portability for both pension and health care benefits seems to be reasonable cost-effective after a bilateral or multilateral agreement has been successfully concluded."

[165] Article 2. See also Article 4(1) of ILO Maintenance of Social Security Rights Convention, 1982 (No. 157) and 2011, Resolution 33(g), para. 35(d).

[166] *Convenio De Seguridad Social Entre La Republica De Chile Y La Republica Del Peru* (2002). The assistance of Rob Rusconi is specifically acknowledged.

In view of the above, it is recommended that –

- The detailed modalities for cross-border portability of retirement savings/benefits of participating informal economy workers be carefully considered;
- Specific provision be made in legislation informing the establishment of the dedicated informal economy worker scheme/arrangement for the cross-border portability of worker retirement contributions and benefits. This would require a statutory provision, which authorises and/or confirms the power to conclude appropriate social security agreements with other countries; and
- More particularly, provision should further be made for the overriding effect of these agreements, taxation arrangements (for example the avoidance of double taxation) and social security coordination principles.

3. COMPARATIVE EXPERIENCES

This chapter summarises the lessons that may be learned from developments in other countries, particularly those in the developing world. The first part of the discussion considers initiatives at conceptual or regulatory level, a consideration of the different modalities employed to achieve social security coverage for informal economy workers, and the need to heed flexibility concerns and arrangements that are supportive of coverage extension. This is followed by a reflection on measures taken by a number of individual countries in Africa, Asia and Latin America to enhance coverage extension. The chapter closes with a conclusion.

3.1. Conceptual and Regulatory Developments[167]

Comparative developments indicate that several innovative attempts have been made, especially in recent years, to extend coverage to informal workers in developing countries.[168] The attempts embrace both conceptual and regulatory developments, institutional initiatives, as well as tailor-made design options. In addition, supportive arrangements, including a focus on stakeholder consultation, communication and an informal sector-friendly enabling framework, are important. These developments discussed below cover employment-related protection, i.e. that part of the system mainly captured by contributory arrangements, as well as social assistance provisions.

Some countries have addressed exclusion by redefining the concept of employee/worker in legislation governing social security coverage.[169] Developing countries are increasingly seeking innovative conceptualisation to widen the application of social security beyond the traditionally envisaged groups. In India, for example, in an attempt to ensure social security provision for the huge informal economy, the *Unorganised Workers' Social Security Act* (Act 33 of 2008) adopted a deliberately extensive notion of what is comprehended by the term 'unorganised sector', and of who is intended to be an employer and a worker for the purposes of covering those embedded in a relationship of work in the informal economy.[170] Corresponding innovations are also found in some countries. In Tanzania, the *Social Security (Regulatory Authority) Act* defines the 'informal sector' as the sector that includes workers who work informally and who do not work in terms of an employment contract or another contract contemplated in the definition of employee.[171] The definitional extension could also occur on an industry basis. For example, in the beedi industry (hand-rolled cigarettes), the *Beedi and Cigar Workers (Conditions of Employment) Act* in India[172] covers a person employed directly or through any agency who is given raw materials by an employer or a contractor: in this way, outworkers and home workers are included.[173]

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[167] Part of the rest of the text in this part (par 3) is largely dependent on a presentation made by Olivier (2017) entitled *Expanding the boundaries of social security protection for informal economy workers in developing countries* (paper presented at the Labour Law Research Network Conference, Toronto, Canada), and subsequently adjusted and incorporated as Olivier, M (2019), "Social security protection for informal economy workers: Developing world perspectives" in M Westerfeld & M Olivier (2019), *Social Security Outside the Realm of the Employment Contract: Informal Work and Employee-like Workers* (Elgar) 2-29.

[168] See also Olivier, M (2014), "Work at the margins of social security: Expanding the boundaries of social protection in the developing world" in W van Oorschot, H Peeters & K Boos (eds) *Invisible Social Security Revisited: Essays in Honour of Jos Berghman* (Lannoo Publishers) 215-230.

[169] See Olivier (2014) 220, on which the rest of this sub-paragraph is based.

[170] *Unorganised Workers' Social Security Act* (Act 33 of 2008), section 2(k).

[171] *Social Security (Regulatory Authority) Act* 8 of 2008, section 3.

[172] Act 32 of 1996.

[173] Sankaran, K (2012), "Flexibility and informalisation of employment relationships", in Fudge, McCrystal & Sankaran (eds), *Challenging the legal boundaries of work regulation* (Oxford and Portland, Oregon: Hart Publishing 29-47 at 44.

Innovative conceptualisation is an area that lends itself to significant further development. For example, adopting appropriate regulatory techniques to comprehensively cover supply chain scenarios would support extension of protection.[174] In fact, as indicated above, the 2016 ILO *Resolution concerning decent work in global supply chains* highlights the importance of an intervention such as "legislation on responsibility down the chain, sometimes providing for cross-border regulation of supply chains."[175]

3.1.1. Extension of existing schemes to the informal economy and making participation compulsory

In some cases, existing contributory schemes have been extended to include at least some informal worker categories. Beyond retirement provision, for example, unemployment insurance and labour law arrangements (impacting on social security as well) have been extended to domestic workers in South Africa.[176] Of particular importance is extension of coverage on a compulsory basis to the self-employed, in particular in several Latin American countries, but also in the Philippines.[177] Traditionally, in developing countries, there was little incentive for the self- and informally employed to join existing contributory schemes, which were accessible to them on a voluntary basis. In an attempt to increase coverage, certain Latin American countries have commenced making participation in these schemes compulsory, supported by incentives such as eligibility for/access to other social security benefits (for example, family allowances) and lowering the contribution rate for low-income self-employed persons.[178] As remarked by Mesa-Lago,[179] the few Latin American countries that require compulsory membership have better and more effective coverage.

3.1.2. Embracing the whole informal economy

Some governments have extended existing arrangements to the entire informal market. India[180] and Indonesia[181] are examples of countries that adopted overarching framework legislation aimed at extending social protection to the whole of the informal economy and to informal workers generally. Also, establishing universal schemes has become the hallmark of achieving extended coverage. Risk-category schemes based on a dedicated legal mandate and/or policy framework have been introduced, including universal health insurance schemes in Ghana, Rwanda and Thailand[182] among others and, as indicated later in this contribution, comprehensive pension schemes have

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174 Lund, F (2012), "Work-related social protection for informal workers" *International Social Security Review* Vol 5 (4), 23-24, 26. Important developments in this area have occurred in developed countries 'jurisdictions, such as Australia, although even here the developments are still piecemeal and sector-focused: see M Rawling (2006), "A generic model of regulating supply chain outsourcing", in C Arup, P Gahan, J Howe, R Johnstone, R Mitchell & A O'Donnell (eds) *Labour law and labour market regulation* (Sydney: Federation Press).

175 Par 2.3.2 above: ILO *Resolution concerning decent work in global supply chains* (2016) paragraph 9.

176 Lund, F "Work-related social protection for informal workers" 26; Olivier, M (2009), *Informality, employment contracts and extension of social insurance coverage* (ISSA Project on 'Examining the existing knowledge of social security coverage', Working Paper, no 9, Geneva: International Social Security Association (ISSA)) at 23-27.

177 Regarding the Philippines, see MacKellar, L (2009), *Pension systems for the informal sector in Asia* (Social Protection Discussion Paper, no 0903) (World Bank) 26-28. MacKellar remarked (on p 27):
"The new social security law enacted in 1997 mandated compulsory social security coverage of self-employed persons, regardless of their trade, business or occupation, with an income of at least 20.1 USD a month and not over 60 years old. As a result, the coverage of informal sector workers has tripled over the last 10 years, from 1.7 million in 1997 to 5.6 million as of September 2006. As of June 2006, out of the 26.5 million individuals that were registered with the social security system in the Philippines, around 21% were informal sector workers, up from 8.8 % in 1997."

178 For example, in Chile the self-employed were meant to be fully mandatorily included in the national pension system by 2015, and in the health system as from 2016: see Mesa-Lago, C (2008), "Social protection in Chile: Reforms to improve equity" *International Labour Review*, vol 147 (4), 377-402 at 394; see also Calvo, E, F Bertranou & E Bertranou (2010), "Are Old-age Pension System Reforms Moving Away from Individual Retirement Accounts in Latin America?" *Journal of Social Policy*, vol 39(2) 223-234 on 230.

179 Mesa-Lago (2008) 389.

180 *Unorganised Workers 'Social Security Act*, Act 33 of 2008. See also below.

181 *National Social Security Law of Indonesia*, Act 40 of 2004.

182 Regarding Thailand, see Damrongplasit, K & G Melnick (2009), "Early results from Thailand's 30-baht health reform: Something to smile about" *Health Affairs*, vol 28 (3) 457. Other African countries that have decided to go this route (although implementation may still be absent, or not fully realised) include Benin, Côte D'Ivoire, Gabon and Nigeria.

been introduced for rural and urban workers in China.[183] All of these schemes have achieved remarkable coverage in a short space of time.

Another example of this approach concerns the creation of targeted schemes for informal workers. The Ghana Informal Sector Fund[184] and the Kenya Mbao Pension Scheme[185] serve as useful examples, having attracted (also as the result of informal workers-sensitive design features) sizeable members in the few years since they were established.

3.1.3. Adopting a sector-by-sector approach

In some countries informal workers have been included sector by sector, usually on the basis of separate or dedicated schemes. Rather than attempting to solve the problem on an informal economy-wide basis, policymakers have chosen key sectors to increase coverage. One example is the welfare funds established in India. They are financed through levies collected from selected employers and manufacturers,[186] and provide a range of benefits, including social security-related benefits such as medical care and maternity assistance. Also at a state level, a tax (cess) is imposed by state governments on the aggregate output of selected industries (for example, the Beedi Welfare Fund is financed by a tax on beedis).[187]

Another prominent example is the establishment of gradualist sector-by-sector schemes embedding tailor-made solutions, provisions and prescriptions for particular groups of workers in the informal economy in Tunisia. This latter approach is among others based on the introduction of realistic income scales which determine the lowest income bracket (for purposes of contributions) relevant to the occupation of the insured person (physician, architect, shopkeeper, and so on) and the size of the firm or farm, supported by educational and promotional programmes regarding the value of income protection.[188] Sector-based approaches have also been used in South Africa's domestic worker environment.

3.1.4. Comparative experiences: Tailor-made design modalities

Design characteristics, in the form of specialised contribution modalities, relaxed entitlement criteria and context-sensitive benefit packages, for the informal economy as a whole, or for particular sectors, have assisted in addressing the challenge as to why informal workers were unwilling, if not unable to participate in the past.[189] Contribution modalities include:

- Allowing informal workers to contribute to the extent of their ability at a frequency that suits their particular context and contributory capacity, for example, in Ghana and the Philippines;[190]

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[183] The voluntary rural and urban pension schemes were introduced in 2009 and 2011 respectively, and are (co-)funded by government via matching contributions. By the end of the first quarter of 2012, 376 million people were already participating in the two schemes, despite weak incentives to contribute above the minimum (see Dorfman, M, M Wang, P O'Keefe & J Cheng (2012), "China's pension schemes for rural and urban residents" in R Hinz, R Holzman D Tuesta & N Takayaka (eds) *Matching contributions for pensions* (Washington, DC, The World Bank, 217-241; Servais, J (2012), "The new ILO Recommendation on social security" *E-Journal of International and Comparative Labour Studies* 2012, vol 1 (3- 4), 1-26 at 14. See also par 2.6.7 below.

[184] Informed by an extensive consultative process initiated by a presidential commission, the Fund provides for flexible contribution modalities and a two-tier tailor-made benefit arrangement, which ensures both long-term benefits and the opportunity to utilise funds for a range of core needs; in a short space of time 90,000 informal workers have initially joined the Fund. See par 3.2.4 below.

[185] Njuguna, A (2012), "Critical success factors for a micro-pension plan: An exploratory study" *International Journal of Financial Research*, vol 3 (4), 82-97 at 86-88.

[186] Lund (2012) 23.

[187] Olivier, M (2009), *Informality, Employment Contracts and Extension of Social Insurance Coverage* (Report prepared for the International Social Security Association (ISSA)) 15.

[188] Chaabane, M (2002), *Towards the universalization of social security: The experience of Tunisia* (Extension of Social Security, ESS Paper, no 4, Geneva: ILO). See par 3.2.4 below.

[189] See Olivier (2009) 15-17; Servais (2012) 4.

[190] Regarding Ghana, this is provided for within the framework of the Ghana Informal Sector Fund, referred to above and below. In the Philippines, in addition to compulsory arrangements, the Philippines Social Security System has adopted several flexible approaches to meet the requirements of informal sector workers who do not have access to formal banking arrangements and who are only able to contribute irregularly, by introducing the following programmes and (in the process) partnering with organised informal sector groups (ISGs) and Local Government Units (LGUs) (see Mines, J (2015), *Moving towards inclusive growth: The Philippine Social Security System* (Philippine Social Security System), accessed at https://www.sss.gov.ph/sss/DownloadContent?fileName=2015_Updated_ISSA_ Report_on_ISCoverage_FINAL.pdf on 2 December 2016):

1) AlkanSSSya Program for the self-employed in the services sector;

- adopting realistic income baselines for the calculation of contributions, for example, in Tunisia,[191] and
- topping up small contributions of poor workers by way of government subsidies, for example in India[192] and Tanzania.

3.1.5. Supporting arrangements: consultation, communication and an enabling framework

Extending coverage to and enhancing social security-related protection of the informally employed cannot be achieved in isolation. It is suggested that there are at least three areas of intervention that are required to ensure that a suitable context of coverage and protection is in place.

- Stakeholder consultation: Firstly, there is need to ensure that appropriate stakeholder consultation takes place, to determine concrete options – and consider challenges and solutions – in relation to extending coverage to the informally employed and developing suitable protection modalities for them.

Relevant options, dealing among others with appropriate contribution rates and payment modalities, eligibility criteria, and dedicated benefit regimes, have to be considered and, once revised and adopted, submitted for implementation. World-wide experience has shown that successful coverage extension and suitable forms of protection in social security terms for those who work informally have been preceded by thorough consultation with stakeholder groups and institutions. In fact, as indicated above, this appears to be called for also by prevailing international standards.[193]

Also, while consultation would have to involve the targeted groups themselves, at times even at grass-roots level, the consultative team itself has to have a high-level status, and preferably reflect stakeholder group representation. In some countries the introduction of suitable arrangements for covering the informally employed was preceded by a thorough consultative process conducted by a presidential[194] or government-appointed[195] commission.

- Communication: Secondly, as supported by evidence emanating from other countries where the self- and informally employed have been included in social security schemes, there has to be thorough communication of envisaged new arrangements. In particular, those who are affected by the new arrangements, including informally employed workers and, where relevant, their providers of work, have to be properly informed. Given the national relevance of such arrangements, awareness-raising interventions targeting the general public also have to be introduced.

- Enabling framework: Thirdly, extending coverage and enhancing protection would require that a proper enabling framework has been established and is operational. The meaningful participation of the informally employed implies that they should be supported to do so – from both a broader policy and operational perspective they have to be strengthened and enabled. Among others, steps that would enhance the ability, of those operating and working in the informal economy, to contribute to and access the new system have to be considered and introduced. Fixing the minimum wage at a level that would enable them to contribute would be one such matter to be considered.

In addition, those operating in the informal sector need access to credit, tailored banking services, transport, training and skills development packages, mentoring and appropriate business opportunities. Some of these matters are currently being addressed in, for example, the Indian context – among others through the linking of the so-called Aadhaar biometric identification card facility to bank accounts in order to enhance financial inclusion. Also, overcoming supply- and demand-side constraints, and access to markets are some of the core priorities to be addressed.

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2) Servicing and/or Collecting Partner Agent Agreement for cooperatives and microfinance institutions;
3) Contribution Subsidy Program for farmers and workers in the agricultural sector;
4) Coverage Program for government job order and contractual (JO/C) workers; and
5) MuniSSSipyo-Collect Program for unbanked areas or provinces.

[191] See par **3.2.3** below.

[192] Both the Union Government and State Governments in India contribute comprehensively to top up small informal worker contributions in relation to social security schemes which focus on including informal workers: see among others Dorfman, J *et al* (2013), *China's Pension System: A Vision* (World Bank) 99, 125. See also par 2.6.8

[193] See par **2.3.4** above.

[194] E.g., Ghana.

[195] E.g., India.

In essence then, government and other stakeholders would have to play a crucial promotional and development role to support those involved in the informal economy and enhance their capacity to participate meaningfully in the reformed social security framework. Of course, it is necessary to consider and weigh up costs and benefits. A government must prioritise actions and spending and ask where the attention should most crucially be focused.

3.2. Country-specific Developments

In the discussions that follow, developments in a number of countries are summarised.

3.2.1. Extension of social protection to informal workers in China[196]

The informal sector in China is considered as one of the main driving forces beyond economic growth in China. This heterogeneous sector is highly mobile, dynamic and competitive, and has close links with internal migration. Its growth in China has been associated with several factors, including economic restructuring, rural-urban migration, labour market segmentation, weak formal safety nets and a social protection system which incentivises informal sector growth.[197]

In 2007, an OECD study noted that, depending on the definition used, even in urban areas in China informal work constitutes 50% of all urban employment, fuelled in particular by internal migration.[198] However, more recent data indicate that the share of informal employment has been decreasing rapidly, from a high of 65.2% in 2001 to 40.3% in 2010, largely attributable to China's economic growth, market-oriented reform and labour market regulation, which effectively extended labour (law) protection to more informal workers.[199] Migrants account for more than one-third of urban workers,[200] thereby contributing to the shared fate of internal migrants (also migrant workers) and informal urban workers for social security coverage purposes. In fact, these categories remain poorly covered in terms of retirement-related social insurance provisioning. Poor coverage is the result of several overlapping factors, in particular –[201]

- The occupation-oriented nature of public pension scheme coverage;
- Lack of enforcement of labour regulations;
- The voluntary nature of membership of urban (and also rural) pension schemes for urban and rural *residents* respectively (as opposed to *workers*, who are compelled to enrol);
- Self-selection, as a result of the fact that: (i) even those who opt out of social insurance coverage remain covered under the basic social assistance programme (e.g., the Minimum Livelihood Guarantee Scheme (Di Bao)); and (ii) employers are more likely to opt out, as they think that the social insurance programmes emphasise redistributive functions and provide unattractive benefits.

In addition, the inability of migrant workers who are not registered to work in cities due to the operation of the Hukou system, further contributes to the absence of formal social protection.[202]

Informal workers are therefore served by old age-related social insurance schemes only to a limited extent, particularly in rural areas, and as they do not generally participate in urban old-age insurance systems.[203] In fact,

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196 See M Olivier (2017), "Social protection innovation and challenges in China and Africa: Selected comparative perspectives" *Frontiers of Law in China* (Vol 12, No 3, September) 429-472, from where this has been taken.

197 See Jütting, J & T Xenogiani (2007), *Informal Employment and Internal Migration: The Case of China* (OECD, Beijing, Nov), accessed at https://slideplayer.com/slide/8361611/ on 2 November 2018.

198 *Ibid*.

199 See Gao, W (2015), *Informal Employment and its Effect on the Income Distribution in Urban China* (presentation, Brussels), accessed at file:///C:/Users/Olivi/Downloads/Session%204%20-%20Gao%20Wenshu%20(2).pdf on 2 November 2018; Yang, D (2010), *Improving Social Protection System in China: Key Trends and Policies* (OECD), accessed at https://www.oecd.org/els/emp/45276885.pdf on 2 November 2018.

200 Gao (2015).

201 Jiang, J, J Qian Z & Wen *Social Protection for Workers in the Urban Informal Sector in China: Institutional Constraints and Self-selection*, accessed at https://www.researchgate.net/publication/318831285_Social_Protection_for_the_Informal_Sector_in_Urban_China_Institutional_Constraints_and_Self-selection_Behaviour on 2 November 2018.

202 Jütting & Xenogiani (2007).

203 Dorfman (2013) 3-4, 26, 35; see also Jütting & Xenogiani (2007).

as has been indicated, the weak social protection position of informal workers, in particular migrant workers, also extends to their family members, many of whom remain in rural areas.[204]

Nevertheless, important changes to this scenario are discernible, mainly as a result of two reasons. Firstly, the Chinese government has strengthened labour market regulations, as is apparent from the range of new labour-related laws that have been enacted: it seems that stricter regulations have positive effects on increasing coverage rates. Secondly, the changes in main labour market outcomes (e.g., increased formal employment and increased earnings for unskilled workers) facilitate the improvement in coverage modalities.[205] Despite this, a considerable wage gap still exists between informal and formal workers, which enhances labour income inequality in urban areas: a recent study indicated that informal employees' earnings were 67% of those of formal employees, and this large earnings gap raised the Gini coefficient to 0.42 in 2005.[206]

One of the critical tasks ahead is to take steps to reduce and overcome the inherited inequality. From a social protection perspective, also as far as social insurance-based retirement provisioning is concerned, it appears necessary to take steps to integrate different components of the system.[207] The envisaged unification of public urban and rural pension systems, and the granting of urban residence permits to an increasing number of permanent urban residents are important steps towards integration, equal treatment and extended coverage.[208]

3.2.2. Comprehensive and innovative arrangements in India

A few years ago an eminent Indian economist referred to the estimates of the National Commission for Enterprises in the Unorganised Sector (NCEUS) regarding social security coverage of workers in the unorganised sector (essentially referring to the informal economy), indicating that the Commission's estimates showed that the existing models covered only a small proportion – around 8 per cent – of the country's vast army of informal workers.[209] He concluded as follows:[210]

> *"Our brief review shows that governmental and non-governmental initiatives to address the social security needs of the working poor in India are woefully inadequate. In the organized sector, the proportion of workers covered has fallen due to informalization of the workforce. The poor, who eke out an existence through various types of informal employment in the unorganized sector, are among the most vulnerable in any society. A shock that has a relatively small impact on the non-poor can be a cause for great concern for the poor, since even marginal downward fluctuations in income can push them to destitution levels. Social security measures which address the contingent risks faced by them are woefully inadequate, except in certain parts of the country."*

The recently published 2018 *Draft Labour Code on Social Security*[211] (hereafter referred to as the Draft Code), prepared by the Ministry of Labour and Employment, Government of India, aims specifically at extending coverage of social security to informal economy workers. This follows an earlier largely unsuccessful legislative attempt to achieve such coverage extension. The Draft Code evidently foresees extensive coverage of those who work in the informal economy. This appears from the following:

- Comprehensive sphere of application: The Draft Code is said to apply among others to all "entities" as well as to "workers that are employed by any entity" as well as a worker "who may also be the owner or the proprietor of an entity or a self-employed unit" (see clauses 1.4 and 1.5).
- The extensive categories of persons covered by the "worker" concept is then used, at least partly, as a basis for formulating registration and contribution paying obligations. Registration of workers will be affected in any of different categories; there is a general obligation on every worker to register/to be registered.[212]

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204 Jütting & Xenogiani (2007).
205 Yang, D *Improving Social Protection System in China: Key Trends and Policies*.
206 Gao, W *Informal Employment and its Effect on the Income Distribution in Urban China*.
207 Yang *Improving Social Protection System in China: Key Trends and Policies*.
208 See Olivier (2017) for further details.
209 Srivastava, R S (2013), *A Social Protection Floor for India* (ILO) 25.
210 *Ibid*, 25-26.
211 See the Draft Code of March 2018, published on the website of the Government of India's Ministry of Labour and Employment – see https://labour.gov.in/sites/default/files/SS%20Code%202018-03-28.pdf, accessed on 2 November 2018.
212 Clause 11.

- Contribution payment reflects and builds on the distinctions indicated above. Contributions are payable by employers and workers;[213] provision is also made for government contributions,[214] although not specified.
- Differentiated contribution payment obligations are imposed on workers depending on, in particular, the socio-economic category to which the worker belongs. No contribution is required by a worker who falls within the lowest socio-economic category.[215]

Other specialised arrangements to achieve informal economy worker inclusion have also been adopted, also at the State level. In serving the overarching goal that a transformed social security system should address the underlying structural and material basis of social exclusion, as well as multi-dimensional poverty, social security policy and system design should be sensitive to the fact that for informal economy workers, meeting immediate needs, and not merely future contingencies, is a priority.[216] Apart from the needed emphasis on sufficient health protection, there is evidently a need to provide for, and protect, the *means by which informal workers earn a livelihood*. It is significant to note that several Indian state governments (e.g., Karnataka and Odisha) make provision in their social security schemes for among others assistance for the purchase of working tools, which (at least in the case of Karnataka) has resulted in considerable take-up.[217]

3.2.3. Tunisia: Social security for informal economy workers[218]

Tunisia has two statutory social insurance schemes, one for the public and one for the private sector, i.e. the CNRPS and CNSS respectively. Both these schemes are administered by the National Social Security Fund and are operated on a pay-as-you-go (PAYG) basis. In addition, Tunisia has a contributory social health insurance scheme (CNAM) – i.e., a national health insurance fund for both public and private sectors. All of three schemes are subject to oversight by the Ministry of Social Affairs. Each scheme has an administrative board whose members are appointed on a tripartite basis, namely, State representatives, employers and employees.[219]

Tunisia has employed an innovative gradualist approach that has achieved high levels of social security coverage, especially within the informal economy. In 1996, Tunisia implemented a social security system which combined proper enforcement with the creation of a more accurate income estimation system for the self-employed. These two aspects, combined with education programmes, have seen high levels of growth in coverage, with 80% of Tunisia's employed population covered by some form of social security in 1999, in comparison to just 60% some 10 years earlier. Coverage has been extended for health care, old age pensions, maternity and employment injury. The expansion of social security in Tunisia has been successful at targeting large portions of the informal economy, including: craftspeople, petty traders, and small farmers, although levels of coverage still remain low in these industries in comparison to other industries.

The first part of the approach saw changes to the social security system, with new legislation enacted in 1995 which unified the two existing social security schemes – one for self-employed agricultural workers and one for self-employed non-agricultural workers – into one scheme for the private sector (i.e. the CNSS). Under the CNSS fund, a number of schemes exist that vary in terms of contributions and benefits according to the individual's occupation (see the discussion below). Differences exist both between schemes and within individual schemes. The main CNSS social insurance schemes, introduced over time via separate legal instruments, cover the following occupational groups:[220]

a) Private-sector employees, excluding agriculture;
b) Employees in agriculture;
c) Members of agricultural cooperatives;
d) Self-employed, including in agriculture;
e) Tunisians working abroad;
f) Students;
g) Low-income earners (including construction labourers, domestic workers, independent fishermen and small farmers, amongst others); and

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213 Clause 20.
214 See in particular clause 25.1
215 Clause 20.3 & 20.4.
216 Ahmad, E, J Drezé, J Hill & A Sen (1991), *Social security in developing countries* (Oxford: Clarendon Press) 43.
217 In the case of Odisha, one of the schemes also provides for the purchase of a bicycle.
218 See also Chaabane (2002); Olivier (2009).
219 Economic and Social Commission for Western Asia (ESCWA) (2016), *Social Protection Country Profile: Tunisia* (UN, Beirut) 1.
220 *Ibid, 4. See also ISSA and SSA (2017), Social security programs throughout the world – Africa 234.*

h) Artists.

The two private sector schemes referred to above had been differentiated by the scope and the amounts of benefits, the level of contribution rate and the basis taken for calculating contributions. The unification of the two schemes led to an increase in the amount of agricultural self-employed and an increase in the scope and benefits of the scheme.

The variations in terms of contributions and benefits between these schemes are explained in the figure below.

Figure 1: Overview of NSSF (CNSS) social insurance schemes in Tunisia[221]

Category of worker	Mandatory/ optional	Social insurance contributions	Old-age pension benefits	Disability benefits	Survivorship benefits	Child benefits	Death benefit
Private-sector employees, excluding agriculture	Mandatory	27.75% (employer 16.57%, employee 9.18%)	40% of reference salary + 0.5% increase for extra contributions capped at 80%	50% of reference salary + 0.5% increase for extra contributions capped at 80%	75-100% of deceased's pension, between spouse and children	For up to three children	For spouse or one child
Employees in agriculture	Mandatory	12.29% (employer 7.72%, employee 4.57%)	As above	40% of reference salary + 0.5% increase for extra contributions capped at 80%	50% of the deceased's pension for the spouse; 20-30% for one or two children		As above
Members of agricultural cooperatives	Mandatory	19.47% (employer 12.48%, employee 6.99%)	As above	As above	As above	For up to three children	For spouse or one child and to dependents on death of worker
Self-employed, including in agriculture	Mandatory	14.71% by self-employed	40% of reference salary + 0.5% increase for extra contributions capped at 80%	30% of reference salary + 0.5% increase for extra contributions capped at 80%. Additionally, one year of contributions is paid by the State for persons with disabilities	Up to 75% of the deceased's pension depending on number of children		For spouse or one child
Tunisians working abroad	Optional	13.3%	40% of reference salary + 0.5% increase for extra contributions capped at 80%	30% of reference salary + 0.5% increase for extra contributions capped at 80%	75-100% of deceased's ension, between spouse and children		For spouse or one child
Students	Optional	Symbolic payment of TND5				For up to three children	

221 Economic and Social Commission for Western Asia (ESCWA) (2016), *Social Protection Country Profile: Tunisia* (UN, Beirut) 6.

Category of worker	Mandatory/ optional	Social insurance contributions	Old-age pension benefits	Disability benefits	Survivorship benefits	Child benefits	Death benefit
Low-income earners	Mandatory		30% of reference salary + 0.5% increase for extra contributions capped at 80%	30% of reference salary + 0.5% increase for extra contributions capped at 80%	50% of the deceased's pension for the spouse, 30% for one child		
Artists	Mandatory	14.71%	As above	As above	75-100% of deceased's pension, between spouse and children		For spouse or one child

Contributions are paid quarterly. Not all categories of informal economy beneficiaries have access to the same range of benefits. For example, as regards sickness and maternity benefits, the self-employed, artists, fishermen are entitled to cash and medical benefits; household workers, on the contrary, have access to medical benefits only.[222] Also, as regards family allowance, these are payable to private-sector employees, including casual and temporary workers; fishermen; members of agricultural cooperatives; employees of farms with 30 or more workers; students younger than age 28; and trainees of working age. However, self-employed persons, household workers, and employees of farms with less than 30 workers are excluded.[223] Maternity leave is paid to female wage workers, not to self-employed women, as income replacement during the time off from work due to pregnancy and maternity.[224] Compensation for industrial injury and occupational diseases, payable via CNAM, is available to salaried employees, including casual, temporary, and household workers; members of cooperatives; fisherman; apprentices; and students. However, voluntary coverage exists for self-employed persons and artists.[225] Unemployment insurance benefits are not provided for. Non-contributory unemployment assistance benefits are funded by the NSSF from available funds. However, excluded from unemployment benefits are self-employed persons, agricultural workers, and household workers.[226]

The second change to the system was the extension of the bracket on which the flat-rate income on contributions was calculated. To coincide with this, efforts were made to avoid minimal contributions by the self-employed based on the lowest income brackets. A realistic income scale which determines the lowest income bracket relevant to the occupation of the insured person (physician, architect, shopkeeper etc.) and the size of the firm or farm was introduced. Through the application of this scale, each insured person must contribute equal to the bracket employed on the scale, unless they can prove that their real income is lower, while they are free to contribute on a higher scale. These changes to the social security system had a positive influence which resulted in coverage extension.

Educational and promotional programmes have also coincided with a change in attitude by many Tunisians which has seen them embrace income protection for old age, and protection against illness as a priority. This change in attitude is borne out of rising medical costs, an educational role played by trade unions, employers and the government, and positive experiences of the benefits of social security. These aspects have combined to legitimise social security. The new measures combined with the awareness and education campaigns had led to almost 70,000 new affiliations in 1996 and 1997 alone.

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[222] ISSA and SSA (2017), *Social security programs throughout the world – Africa* 235 – free or highly subsidised health care to low-income households. This social health provision is reserved for those not covered by contributory social insurance schemes. This non-contributory scheme was first established by Law 1-63 of 29 July 1991; it is funded by central government transfers to the Ministry of Health to cover the cost of granted health care: Economic and Social Commission for Western Asia (ESCWA) (2016), *Social Protection Country Profile: Tunisia* (UN, Beirut) 22.

[223] ISSA and SSA (2017), *Social security programs throughout the world – Africa* 238.

[224] Economic and Social Commission for Western Asia (ESCWA) (2016), *Social Protection Country Profile: Tunisia* (UN, Beirut) 21.

[225] ISSA and SSA (2017), Social security programs throughout the world – Africa 237.

[226] *Ibid, 238; Economic and Social Commission for Western Asia (ESCWA) (2016), Social Protection Country Profile: Tunisia (UN, Beirut) 10-11.*

The reforms to the social security system have not been successful in extending coverage to everyone in the informal sector. There are several challenges of extending coverage to certain excluded groups, despite attempts by Tunisia to extend social security coverage to the entire working population. These challenges include –

- The dispersal and marginal nature of the sectors concerned;
- The limited capacity of the people concerned to pay contributions, given low wages in certain sectors and the irregularity of employment and low skills; and
- The fact that coverage by a contributory social security scheme may not be felt to be an urgent need by the people concerned, in view of among others the existence of additional forms of social protection (such as social assistance provision).

Further, an adapted system was also not successful at achieving high levels of coverage of fishermen. There have also been lower levels of social security extension in rural areas due to the difficulties of administering the system in rural zones and fishing ports.[227]

In conclusion, it is certainly possible to apply the innovative approach of the Tunisian experience to other social security institutions. The employment of a realistic income scale can be implemented elsewhere; however, a strong education and consultation programme would also be needed. It has been noted that in the past, certain quarters of the Tunisian workforce had been reluctant to fully embrace social security for a variety of reasons,[228] but the education programmes and societal changes in the perceptions towards social security meant that changes to the system were more readily embraced. It therefore appears that the Tunisian experience suggests that the application of social security can only be successful if accompanied by programmes which educate workers about the new system and also encourage them to embrace it. This should take place alongside a consultative approach.

Social security in Tunisia has traditionally been the sphere of the government. Pressure for this initiative was not placed on the Tunisian government by the Tunisian population, but rather it was encouraged by the Tunisian government, and implemented along with strong education programmes which encouraged previously reluctant workers to accept it.[229] The size of the contributory payments is also important as these were small enough to be affordable, and also flexible if it could be shown that the contributor was earning lower than the base income for the particular type of job. The consolidation of the two insurance schemes for the self-employed into one and the subsequent positive results illustrates that groups within the same sector should not be too small as this can restrict the scope and level of benefits available, as well as appearing unattractive for potential members.

The Tunisian example illustrates the complexities of extending coverage to the informal sector suggesting that it is necessary to try to implement systems which are specific to the needs of the targeted group. The viability of this extension approach to other lower-income developing countries may be less apparent. It is important to note that Tunisia is a middle-income developing country and thus had the capacity to manage this type of extension.

3.2.4. Ghana Informal Sector Fund[230] and other arrangements

Ghana provides an illustration of an initially less than successful attempt to use an existing public fund to extend social security coverage to the informally employed. Informal economy workers who did not have an employer could voluntarily join the national pension scheme (SSNIT) by paying a double contribution and could, subject to satisfying the generally applicable conditions for eligibility, access the usual range of benefits.

However, innovative measures were introduced in 2010 to cover informally employed workers. This entailed the creation of the Informal Sector Fund by SSNIT, which apparently due to a lack of legal mandate on the part of

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[227] Chaabane, M (2002), *Towards the universalization of social security: The experience of Tunisia* (Extension of Social Security, ESS Paper No.4, Geneva: ILO) 11-12.

[228] Mouelhi, A (1990), "The role of traditional institutions and the cultural image of social security in Tunisia", *International Social Security Review*, Vol 43(4), 460-469.

[229] *Ibid*.

[230] See Arku, J & E Akagbo (2011), "90,000 Join SSNIT – from the Informal Sector" (31 July 2011), accessed at http://jassyarku.blogspot.com/2011/07/90000-informal-workers-join-ssnit.html?m=0 on 2 August 2019 and Adombila, M (2016) "Contributions under SSNIT Informal Sector fund rises to GH ¢75m" (22 June 2016), accessed at https://www.graphic.com.gh/business/business-news/contributions-under-ssnit-informal-sector-fund-rises-to-gh-75m.html on 2 August 2019.

SSNIT, had to be transferred. This led to acquisition of the Fund by the private securities firm National Trust Holding Company (NTHC) in 2012.[231] With the inception of the Fund, an agreement was concluded with a private sector financial institution to finance business development and home improvement loans for members of the Fund.[232] In fact, the Fund provides members with access to a range of other financial services, including life insurance and loans, through partnerships with microfinance organisations. As a condition of receiving the loan, workers are required to pay 5% of the total value of the loan in informal sector fund contributions.[233]

The Fund accommodates dedicated arrangements relating to both contributions and benefits. Contributions to this Fund need not be fixed, but could be based on their ability to pay on a basis preferred by them, be it daily, weekly, monthly, annually or seasonally. Not only individuals who are not in group schemes can save for retirement, but also formal or informal organised groups (e.g., drivers' association, market women associations, etc.).

The Fund is essentially of a defined contribution nature. Informal economy workers contribute to two accounts:

- A Retirement Account (a pension account, from which a member is permitted to withdraw only in the event of retirement, death or disability occurring); and
- An Occupational Scheme Account, which serves as a form of a personal savings account, from which the contributor can withdraw after five months of initial contributions, provided the account has a credit balance (with rules for withdrawals before retirement, e.g. for education and business enhancement).

The normal retirement age is 60 years, but early or late retirement is also possible.[234]

Within three years since the establishment of this Fund, 90 000 members have joined on this basis. It currently has 150 000 members. Nevertheless, as has been noted:

> *" … the Fund covers just a fraction of an informal workforce estimated at 11.2 million according to the World Bank. Unsurprisingly, the government estimates that more than 70 per cent of informal workers do not have a pension of any kind and this is partially due to the remaining 30 private pension firms catering their products primarily to formal sector workers."*[235]

This led to several *private sector* pension funds offering products tailored to the informal sector, on the basis of flexible contribution and benefit arrangements similar to those available under the Informal Sector Fund.[236] In one

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[231] Amedo, J (2017), Pension Funds for Ghana's Informal Sector (16 May 2017) – accessed at http://africabusiness2020.com/2017/05/16/pension-funds-ghanas-informal-sector/ on 2 August 2019. However, as noted in a recent World Bank publication, the scheme continues to operate from an informal sector desk in each of the SSNIT regional offices. The same World Bank publication also notes that governance of the scheme may again revert to SSNIT: "SSNIT management has now determined that the National Pension Act does not preclude SSNIT from managing a tier 2 scheme, and it is interested in moving back into the informal sector market. It is exploring whether it should revive the current scheme or create a new one. To revive the scheme would require buying the scheme back from the National Trust Holding Company. A launch date in late 2019 has been announced with the intention of maintaining the new scheme more directly within the existing SSNIT organizational structure to reduce costs and build on synergies with the tier 1 scheme" – see Guven, J (2019), Extending Pension Coverage to the Informal Sector in Africa (Social Protection & Jobs Discussion Paper No. 1933) (World Bank) 31 – accessed at http://documents.worldbank.org/curated/en/153021563855893271/pdf/Extending-Pension-Coverage-to-the-Informal-Sector-in-Africa.pdf on 26 September 2019. See also SSNIT eyes 13m informal sector workers by 2020, accessed at https://www.myjoyonline.com/business/2019/April-17th/ssnit-eyes-13m-informal-sector-workers-by-2020.php on 26 September 2019, as well as Government of Ghana (2019), Government to provide informal sector with pension scheme, accessed at http://www.ghana.gov.gh/index.php/media-center/news/5179-government-to-provide-informal-sector-with-pension-scheme on 26 September 2019.

[232] Boadi, S (2008), "Credit Scheme for SSNIT Informal Sector Members in Ghana", *Ghana Daily Guide*, 4 December 2008, accessed at https://www.globalcommunities.org/node/32668 on 2 August 2019.

[233] See RNSF (2017), *Extending coverage: Social protection and the informal economy. Experiences and ideas from researchers and practitioners* (Research, Network and Support Facility, ARS Progetti, Rome; Lattanzio Advisory, Milan; and AGRER, Brussels) 95.

[234] See National Trust Holding Company (NTHC) *SSNIT Informal Sector Fund*, accessed at https://nthc.com.gh (in particular https://nthc.com.gh/products/pension_trustees) on 2 August 2019, for further details.

[235] *Ibid*.

[236] *Ibid. See also Anders, M (2017), Can a new pension scheme offer security to informal workers in Ghana? (23 October 2017), accessed at https://www.devex.com/news/can-a-new-pension-scheme-offer-security-to-informal-workers-in-ghana-91296 on 2 August 2019.*

instance, for example, it is possible to make payments via mobile money wallets or through group collections, by organising community members into cooperatives.[237]

3.2.5. Rwanda Universal Digital Pension Scheme[238]

In December 2018 Rwanda launched a long-term savings scheme named Ejo Heza ("Brighter Future") scheme, which offers opportunity and incentives for all Rwandans[239] to save a voluntary share of regular or irregular earnings to mitigate against the risk of old age poverty. The scheme has been described as "the first national-level universal pension program in the world being launched by leveraging existing digital financial inclusion infrastructure in the true spirit of Public-Private-
Partnership."

As has been noted:

> *"A scheme based on individual accounts is feasible in Rwanda because several key pieces of the required implementation ecosystem already exist – (i) national ID for every citizen; (ii) high financial access rates; (iii) a functional network of cooperatives; (iv) over 70% mobile phone penetration including fast growing mobile payment services and; (v) strong mobilization via local Government administrative structures. These elements are all critical parts of the eco-system that can enable a new approach to delivering pension coverage …"*[240]

The scheme is a response to the reality that formal pension arrangements in Rwanda are restricted largely to salaried public and private sector employees. The remaining 94% of its citizens, including farmers, workers in small and micro enterprises, daily wage earners, domestic help and other non-salaried individuals are excluded from formal retirement saving programmes. The scheme provides all Rwandan citizens, including the diaspora, an equal right and opportunity to voluntarily accumulate savings for their old age. As has been noted:[241]

> *"Ejo Heza accounts will be mapped to each member's unique National ID and shall be portable across jobs, locations and service providers. Citizens will use their National ID and mobile phones or computers to 'activate' their Ejo Heza accounts. Members will be free to decide how much and when they want to save based on their own cash-flows and make periodic contributions using their mobile wallets, bank accounts, debit or credit cards. Contributions will be indexed to account for inflation and wage increases over time."*

As far as access to benefits are concerned, a senior Rwandan government representative comments as follows:

> *"Members of the scheme shall be expected to keep savings in their assigned account for a minimum pre-defined number of years. Upon completion of the minimum period, a member may be authorized to withdraw part of his/her benefits as a pre-retirement package. The pre-retirement package may be invested in housing and education or/and any other investment (for those with sufficient savings under the RSSB mandatory scheme). However, it should be noted that the amount of the authorized pre-retirement package will be capped to a maximum percentage of the total individual savings to ensure that the beneficiary retains sufficient funds under the scheme to cater for his/her retirement days."*[242]

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[237] Douglas, K (2016), *Ghana's first pension fund targeting the informal sector*, 6 December 2016, accessed at https://www.howwemadeitinafrica.com/ghanas-first-pension-fund-targeting-informal-sector/56924/ on 2 August 2019.

[238] See *Rwanda launches Africa's first universal digital pension scheme for the mass market* (accessed at http://www.findevgateway.org/sites/default/files/announcement/ejoheza_pressstatement_afr.pdf on 2 August 2019), from where some of the information in this part has been taken.

[239] The scheme is therefore open to Rwandans living abroad and to children (below the age of 16 years) without a national ID who will access the scheme through a sub account opened by the parent/guardian: Rwigamba, E (2018), "An inclusive and integrated pension model for informal sector workers in Rwanda" in Khana, P, W Price & G Bhardwaj (eds) *Saving the next billion from old age poverty: Global lessons for local action* (Pinbox Solutions) 157.

[240] *Ibid*, 157-158.

[241] *Rwanda launches Africa's first universal digital pension scheme for the mass market* (accessed at http://www.findevgateway.org/sites/default/files/announcement/ejoheza_pressstatement_afr.pdf.

[242] Rwigamba, E (2018), "An inclusive and integrated pension model for informal sector workers in Rwanda" in Khana, P, W Price & G Bhardwaj (eds) *Saving the next billion from old age poverty: Global lessons for local action* (Pinbox Solutions) 158.

Other (suggested) contribution and benefit arrangements include the following:[243]

- Apparently, contributions will be automatically indexed at 5% per year.
- The actual pension value will be calculated and calibrated to last for 20 years subject to a minimum of RWF20,000 per month (at 2017 prices).
- Subscribers who accumulate enough to achieve a monthly pension of RWF 100,000 for 20 years will be able to withdraw a part of their savings as a lump-sum.
- A subscriber will be permitted to set up a lien on up to 40% of his/her pension corpus to avail a home or education loan from a bank or financial institution.

The scheme provides a special, means-tested fiscal incentives package for the first three years to encourage mass-scale enrolments and sustained savings discipline by non-salaried workers. This includes a matching government co-contribution of up to a certain amount per year along with a free life insurance cover and a funeral insurance cover. It has been said that design and implementation of The Scheme began as a project under the Ministry of Finance, through a special Project Management Unit. It is now being rolled out and managed by the Rwanda Social Security Board (RSSB).

The *management and administration regime* relevant to the scheme reflects the progress made in Rwanda with digital solutions, and the quest for independence –[244]

- A System Administrator and Integrator is being established to manage the individual pension accounts. It will develop a central record-keeping system, integration and payments processing IT platform that will issue and manage portable, individual pension accounts, and record static and transactional data of each subscriber over multiple decades.
- The trustees/board of directors of the scheme shall recruit independent fund managers (approved by the regulator) to carry out required investments.

The applicable *legal, tax and regulatory framework* has been summarised as follows:[245]

- The scheme will be managed as a voluntary universal long-term savings scheme by all residents and citizens in Rwanda. The National Bank of Rwanda will be the regulator of the Scheme. It will ensure establishment and enforcement of appropriate regulatory, institutional, technology, and administrative frameworks to ensure long term viability of the scheme.
- As a way to motivate sustained voluntary retirement contributions/savings, it is proposed that for the tax relief option the Government adopts an Exempt contribution - Exempt interest earned - Taxed benefits income tax structure for the scheme (EET), which is common internationally. However, there will be matching contributions to encourage participation for those contributors who do not pay tax. In addition, ensuring incentives for all potential contributors, matching has the advantage of being simpler to understand, and ensures that a pension system is not regressive, since taxpayers tend to be the higher income segment of a population.

In the pilot phase, over 30 000 citizens used their mobile phones to open digital Ejo Heza accounts in less than a fortnight and have already contributed over Rwf 20 million in long-term savings using mobile money wallets. A recent World Bank publication notes that: "Based on the initial results, the government projects that if 2 million citizens joined the universal pension scheme over the next five years and saved the equivalent of US$ 10 a month, the government could mobilize retirement savings of over US$ 1 billion by year five and over US$ 3.6 billion by year 10."[246]

3.2.6. Selected Latin American experiences

[243] See Pinbox Solutions (2019), *Ready-to-deploy digital solutions for micro-pension inclusions* (accessed at https://www.pinboxsolutions.com/ on 2 August 2019).
[244] *Ibid*.
[245] *Ibid*, 159.
[246] Klapper, L & J Hess (2019), *The Role of Digital Financial Inclusion in Preparing for Older Age and Retirement* (World Bank) 16.

Whereas Latin America experiences high levels of labour informality and income inequality, it has been remarked in a recently published study that "[T]he Latin American region is diverse and the labour market in Central America is very different from the Southern Cone region. Thus, it is very difficult to make affirmations about trends considering the Latin American region as a whole. There are informal workers in both sub-regions, but we think the reason of their existence as well as measures to protect them vary greatly. So, there are no measures to be applied as remedies for the whole region, nor can some of them be exported to other regions. But we do think that they can be adapted and their results are worth being studied."[247]

Extension of social security via contributory mechanisms have been introduced through trade union intervention and involvement of public social security and other public institutions, including tax authorities. In the process innovative mechanisms to achieve coverage extension has been implemented and, where necessary, adjusted. Several examples can be cited:

1) Incorporation of independent workers in the Dominican Republic: As noted by Ortiz, one of the major challenges of the social security system of the Dominican Republic is the incorporation of independent workers, in many cases migrant workers coming mostly from Haiti who are excluded from social security benefits. He continues:[248]

> *"In order to face this problem, the Mutual Association of Solidary Services (Asociación Mutual de Servicios Solidarios AMUSSOL) was created with the aim to incorporate workers of the informal economy into a more formal framework and provide them with social security coverage. It is the objective of this Association to represent workers so that they can join the Dominican Social Security System. In the end this Association sometimes functions as employer so that informal workers have access to social security. It has more than 14.000 affiliates plus their dependent beneficiaries, covering more than 40.000 people in total. Among its members are a considerable number of street vendors and housekeeping staff, typically excluded from social security. Coverage is obtained by means of a voluntary insurance depending on the contributions paid. If the beneficiary does not pay contributions, there is no coverage. The most interesting feature of AMUSSOL is that it was created by the Autonomous Confederation of Workers´ Unions (Confederación Autónoma Sindical Clasista CASC). This makes this initiative even more remarkable, as it shows the importance union movements may have not only for dependent but also for informal workers. It shows also that informal workers do not have to change radically their way of work, it is the policies around them that change and adapt to their reality, in this case the approach of the unions."*

2) Including micro and small enterprises (own account workers) involved in the informal economy in Uruguay:[249] The *Monotributo programa* in Uruguay consists of a unified tax package, optional, which includes both the payment of social security contributions and the payment of taxes. It was initially implemented in 2001, when it was established that more than 80 percent of Uruguayan independents were excluded from social security. However, it only proved to be successful when new criteria were introduced in 2006, enabling multiple companies to access the Monotributo regime.

The Monotributo scheme, established in 2001, consisted of a unified optional tax payment which replaced special contributions to social security generated according to economic activity, as well as all applicable national taxes in force (except for import taxes). Initially, this scheme focused on small one-person businesses developing business activities in the street or in public spaces. However, the system was modified in 2006 in order to achieve the goal of increasing social protection coverage. The introduced changes allow for the taxation of the productive micro enterprises of informal economy workers, and increased access to social security benefits, mainly to health benefits. As a result of this reform, the annual average of contributing one-person businesses registered reportedly rose to 68,588, which is 12,722 more that the annual average of contributing one-person businesses registered in the previous period (55,866). As noted by Ortiz, as a consequence, the relative share of one-person businesses in comparison with the total of contributing companies increased by about 2.0%: "These results show that the Monotributo scheme has effectively reached a vulnerable group of workers (such as craftspeople, locksmiths,

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247 Ortiz, P A (2019) "Informal and self-employed workers in Latin America: from an excluded category to an example of innovate inclusive measures" in M Westerfeld & M Olivier (eds) *Social Security Outside the Realm of the Employment Contract – Informal Work and Employee-like Workers* (Edward Elgar Publishing Ltd) 141-161 at 142.

248 *Ibid* 153.

249 *Ibid* 154-156 and authorities cited there – from where the narrative has been taken.

carpenters, grinders, weavers, photographers, blacksmiths, welders, and car washers, among others), favouring their coverage and inclusion."[250]

In 2011, the system was again reformed to include personal and associative businesses of persons who live in households under the poverty line or in a situation of socio-economic vulnerability, by allowing them to only contribute a reduced and graduated amount of money. Contribution payment is progressive, starting with 25% of the total contribution, later 50% and then 75%, until only after 36 months of activity, 100% of the contribution needs to be paid. On the lessons learnt from the Monotributo scheme and its adjustments, it has been commented:[251]

> *"One of the main lessons to learn from this system is that in contexts of diverse socio-economic profiles the designing of more flexible funding mechanisms may constitute a valuable tool to promote social inclusion protecting a wide range of economic activities. In addition, the Uruguayan experience shows that it is possible to form strategic alliances between social security institutions and tax collection authorities. Uruguay's quest to include sectors of society previously excluded from social security coverage is well worth pointing out. These categories will keep their work in the form that they wanted and at the same time participate in a social protection scheme. In our view it is a partial formalization, an incentive to be protected but being informal at the same time. These reforms turn the country into a model to follow in Latin America by its efforts to extend coverage to informal workers through innovative mechanisms."*

3) Inclusion of independent agricultural workers and local fishermen in Ecuador: The Peasants' SocialInsurance programme (Seguro Social Campesino, SSC) in Ecuador provides coverage to independent agricultural workers and local fishermen. Ortiz describes the characteristics of the programme in the following terms:[252]

> *"The old age pension paid under this program amounts to 75% of the minimum wage. Affiliation can be individual or collective, although individual affiliation is given priority. Contributions are collected by the farmers' organization. The system is funded on a solidarity basis with the involvement of the affiliates and employers who belong to the National Social Security System, contributions by the State and contribution payments of the protected workers. As can be seen, this scheme is based on the fundamental principles of any social security system: solidarity. However, the way how contributions are calculated is original due to the difficulties to determine the monthly income of agricultural workers and fisherman."*

Ortiz indicates that the great majority of agricultural workers who belong to a social security system do so through the SSC, and refers to data from the Household Survey 2005, suggesting that overall 262,986 workers are affiliated to the SSC, out of which 181,932 belong to the sector of private non-wage-earning workers, and 83% of this population group (151,156) are independent agricultural or peasant workers. He concludes:[253]

"The SSC is characterized by an important service infrastructure, through which it achieves remarkable regional presence. By the year 2008 the system had some 600 dispensaries distributed in the 24 provinces of Ecuador, where beneficiaries have access to health services. Also, when more specialized medical assistance is required, affiliates have the option to turn to the hospital units of the General Individual and Family Health Insurance and other medical units having agreements with the SSC. In short, Durán Valverde indicates that operationally the SSC is characterized by its operating under a model of geographical de-concentration and operative decentralization, under the hierarchy of SSC's Management, which in turn reports to the Instituto Ecuatoriano de Seguridad Social (IESS)' general management, and must submit its policies and programmes to the approval of that entity's Board of Directors."

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250 *Ibid*, 155.
251 *Ibid*, 155-156 and authority cited there.
252 *Ibid*, 156.
253 *Ibid*, 157. Authorities omitted.

of SSC's Management, which in turn reports to the Instituto Ecuatoriano de Seguridad Social (IESS)' general management, and must submit its policies and programmes to the approval of that entity's Board of Directors."

"*The SSC has been affected by a series of situations that make clear that improvement still needs to be made. One of these improvements is the development of the affiliation rates over recent years, which is far from desired, in comparison with the many people in the rural areas who still are totally unprotected. SSC affiliation has been losing ground compared to the growth of the rural population. At the same time, predictions have referred to problems existing in the processing of information and registers, monitoring of the affiliated population and their contributions and the State's commitment, among others."*

"*Nevertheless, the SSC stands out due to several factors mentioned above and still constitutes one of the major strengths of social security in Ecuador. In 2009 it covered 917,417 people, 227,694 families and a total of 34,729 pensioners. Hence this means important progress for a category of workers within the informal economy commonly excluded from protection. Its innovative character of universal coverage while respecting the typical features of the protected group makes it an example worth mentioning."*

3.2.7. A note on the European context

A reflection on the European context needs to take account of the prevailing understanding of the informality concept and its social security implications. Generally, in the global north, a generally accepted approach to informality is to imply that individuals and their employer who engage in productive activities that are not taxed or registered by the government. As has been remarked:

> *"In this approach 'informal' is, in other words, associated with illegal, if not criminal activities, such as tax evasion, evasion of immigration laws and – relevant for our topic – avoidance of social insurance contributions."*[254]

In European standard-setting informal work, and the social security consequences thereof, therefore does not receive dedicated attention, as opposed to the *self-employed*. Article 12 of the *European Social Charter* (1961) establishes the right to social security as a specific human rights instrument, and links this to an obligation on contracting states to establish and develop a system of social security that complies with ILO standards embedded in *Convention 102 of 1952* on *minimum standards in social security*. This particular Convention, unlike the more recent ILO *Recommendation 204* (2015) (*The transition from the informal to the formal economy*), is of little relevance to those working in an informal context. In similar vein, Article 34 of the *European Social Charter* explicitly states a *right* to social security. Nevertheless, despite the generality of this provision, it has increasingly been realised that "self-employed workers are – or can be – just as economically vulnerable as their counterparts in a formal employment relationship".[255] At the EU level, this has translated into a *Proposal for a Council Recommendation*, presented in March 2018.[256] In terms of this Proposal, EU Member States must ensure that the self-employed have access to social protection by extending formal coverage:

a) On a mandatory basis for sickness and healthcare benefits, maternity/paternity benefits, old age and invalidity benefits as well as benefits in respect of accidents at work and occupational diseases, and
b) On a voluntary basis for unemployment benefits.[257]

However, these developments and proposals do not, as such, deal with the issue of social security for informal (economy) workers, and will therefore not be pursued further here.

3.3. Conclusions

[254] See Westerfeld, M and M Olivier (2019), "Preface" in M Westerfeld and M Olivier (eds) *Social Security Outside the Realm of the Employment Contract – Informal Work and Employee-like Workers* (Edward Elgar Publishing Ltd) xii and authority cited there.
[255] *Ibid*, xvi-xvii and authority cited there.
[256] European Commission (2018), *Proposal for a Council Recommendation on Access to Social Protection for Workers and the Self-Employed* (COM(2018) 132 final, 13 March 2018).
[257] *Ibid*, paragraphs 8 and 9.

The developments described in this part are indicative of a conceptual understanding and operational framework of social security which transcend traditional approaches and boundaries. Social security reform in relation to informal economy workers in developing countries is evidently prompted by:

- An overall purpose-driven orientation;
- The adoption of a non-standard mix of public and private, contributory and tax-financed interventions;
- Innovative reconceptualisation;
- Progressive institutional arrangements; and
- Flexible design modalities.

A recent ILO report comments that globally, "The extension of social insurance to categories of workers with contributory capacity who were previously not covered, including through entirely or partially subsidizing contributions, is increasingly being used as a means of ensuring protection and fostering formalization."[258] As a principled position, contributory capacity should trigger coverage via contributory-based arrangements:

> *" … the Committee considers that workers with contributory capacity should in principle be covered by contributory income security mechanisms which provide higher levels of social protection than those available through the basic social security guarantees, while also contributing to formalization strategies. It may be necessary to adapt existing mechanisms to the situation of specific categories of workers in order to secure adequate levels of income protection relative to their needs. A strategy of this nature allows countries to ensure the sustainable and equitable financing of social security systems, based on the principles of collective financing, risk sharing and solidarity. The Committee notes in this respect the importance of designing policies that are inclusive of persons with a limited contributory capacity, for example, by subsidizing their contributions."*[259]

It is indeed necessary, according to the report, to consider the particular context of informal economy workers when designing and implementing coverage modalities of a contributory nature, and to develop tailor-made arrangements to suit this context. As noted in the same report:

> *"The Committee notes, based on national practices, that various measures can be considered with a view to achieving basic income security, including the reduction of the cost of affiliation to contributory schemes, the provision of state support in the form of social contribution subsidies, measures to cover all those with contributory capacity, and measures to strengthen labour inspection and law enforcement."*[260]

As alluded to above, of equal importance when devising appropriate coverage modalities in the South African context, is the need to properly consult with institutions representative of workers in the informal economy.[261]

Finally, it may be necessary to reflect on the sustainability of a scheme designed to serve the interests of informal economy workers. The comparative evidence emphasises the need for arrangements of a sufficient scale – specific measures need to be taken to deal with potentially low take-up by such workers. Apart from matters such as ensuring tailor-made modalities concerning contribution and benefit regimes and eligibility conditions, the provision of incentives and the rendering of sound administration, the very design of the scheme is of critical importance. In particular, most of the comparative schemes described above provide coverage on the basis of defined contribution arrangements, on the assumption that for several reasons defined benefit arrangements entail too much risk to the scheme itself – among others due to the irregularity of contributions and the difficulty with calculating income and period of service, factors which are typically relevant in defined benefit contexts.

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[258] ILO (2019c), *Universal social protection for human dignity, social justice and sustainable development* (General Survey concerning the Social Protection Floors Recommendation, 2012 (202), Report of the Committee of Experts on the Application of Conventions and Recommendations) par 593. The report continues: "The majority of governments (50) report that their national objectives and priorities in the area of social protection include the extension of existing contributory schemes. This sometimes requires certain adaptations of the legal framework, financing arrangements or administrative procedures to take into account the specific characteristics of these categories of workers." (*ibid*)

[259] *Ibid*, par 596.

[260] *Ibid*, par 412.

[261] "The Committee also recalls the importance of tripartite participation and consultation with other representative organizations of persons concerned, including workers in the informal economy and other generally under-represented categories, when defining and regularly reviewing adequate levels of protection for the various categories of persons." *ibid*, par 497. See also paras 2.3.2, 2.3.4 and 3.1.5 above.

4. FEATURES OF THE TARGETED MEMBERSHIP

No systematically-developed data set exists that describes the individuals working in South Africa's informal economy in any detail. For this reason, an understanding of the characteristics of this group must be developed from a number of sources. The purpose of this chapter is to chart the development of this understanding and to present the broad attributes of the workers targeted for participation in an informal-economy retirement scheme.

The discussion that follows describes efforts undertaken to understand the characteristics of workers in South Africa's informal economy. It may be divided into three parts:

- An introductory section laying out the broad attributes, incomes and working conditions of these workers, with reference to a range of studies,
- A description of the quantitative work undertaken to develop an understanding of the size and demographic attributes of this work, and
- A summary of the key features of the group utilised in the financial modelling underlying this report.

This description is supported by the more detailed material set out in:

- **Annexure 5**, which describes the analysis of the data available through quarterly LFSs,
- **Annexure 6**, which covers the GHS, and
- **Annexure 7**, which provides a more detailed narrative of the insights gained from a variety of qualitative Sources.

While the qualitative sources cover a relatively wide period, the figures used for modelling purposes are drawn primarily from recent quantitative sources which are then supplemented by the insights gained from the analysis of qualitative information.

4.1. Qualitative Assessment

How do we set about describing and quantifying an elusive group of workers? These men and women are by definition either devoid of legal support, including retirement provision, or subject to lower levels of institutional and legal support than those participating in the formal economy for registered tax-paying companies and therefore harder to detect. Some of these workers are employees of formal-economy companies who, for a number of reasons, do not enjoy the status of formality. Many of them are self-employed or work for unregistered employers. We see these workers all around us.

And, as many researchers suggest, many of those who should be identified as working in the informal economy are not even counted because their means of survival are not regarded as work.

As discussed earlier in this report, consistent and universally applicable classifications of these workers may not be available; also, merely classifying these workers presents challenges. In consequence, describing and enumerating them can be expected to be difficult. Before setting out efforts to quantify this group using the methods of statistical surveys (see Section **4.2**), the discussion that follows provides a synopsis of the South African literature that paints the picture of the livelihoods of this group of workers. This picture is complex and uncertain. It presents at times contradictory information. It shows a group that is large and diverse, scattered throughout the country and, using a variety of methods of gaining an income, on the whole just getting by.

More difficult still than putting a number to the size of the group is dealing with the evidence that suggests that many of the country's workers are employed in both the formal and informal economies, not just over their working lifespans but at times simultaneously. Neves and his colleagues warn of this difficulty, which is also reflected in comparative experiences globally:[262]

> *"the moniker of the informal sector potentially invokes an overstated dualism. It overlooks the manner in which formal and informal are intertwined, and the manner in which the precarious employment conditions associated with informality are increasingly to be found at the heart of 'formal' enterprises and economies.*"

[262] Neves et al (2011) 2

With reference to the literature studied, the group of workers participating in South Africa's informal economy may be broadly characterised as follows:[263]

- **Numbers are significant but uncertain**. Well over 3 million individuals work in informal economy occupations, contributing significantly to overall economic activity. Disagreement exists regarding this number. Widespread scepticism characterises the commentary on the available data and the possibility that perceived increases may be attributable to improved methods of detection and measurement. Probably the greatest challenge is that formal and informal are not easily defined as a binary alternative, as occupations lie frequently on a continuum between the two and many people work simultaneously in both economies. As expressed by Miriam Altman (2008),[264] "'What can be done about the informal sector?' is the wrong question as there is no sector."
- **Workers are geographically dispersed and working in a range of occupations**. Informal employment is not limited either to cities or the countryside. The majority of informal workers appear to be rural in location but this appears to be changing. The rapid influx of workers to the major metropolitan centres, Gauteng, for example, is not limited to formal-economy employees. Gender dynamics are difficult to read but worthy of careful attention. The numbers of men and women working informally is roughly the same but the proportional contribution of informal work to all employment is greater for women.
- **Informal employment shows a measure of clustering**. Though informal occupations exist in wide variety, including those workers of registered companies who do not enjoy formal employment, some aggregation into large groups (see Figure 2) may be detected.[265] Rates of self-employment among the informally employed appear to be high but not dominant.
- **Earnings are highly variable and volatile**. Analysis of earning patterns shows the income of informal workers, reckoned per hour or overall, as consistently and substantially below that of their formal-economy counterparts. But this income is variable; large differences between clusters are evident. It is also extremely volatile; informal-economy workers typically suffer very high variation in the level of their income over time, even in the very short term.

Figure 2: Most common occupations of men and women working in the informal economy

Male		Female	
% of total informal sector employment		% of total informal sector employment	
Farm-hands and labourers	14.4%	Street food vendors	30.5%
Bricklayers and stonemasons	10.3%	Street non-food vendors	13.5%
Street food vendors	8.4%	Spaza shop operator	6.0%
Street non-food vendors	5.8%	Tavern and shebeen operators	5.4%
Motor vehicle mechanics and fitters	4.3%	Hairdressers, beauticians and related workers	4.4%
Spaza shop operator	3.9%	Tailors, dressmakers and hatters	3.8%
Car, taxi and van drivers	3.8%	Bricklayers and stonemasons	2.8%
Painters and related workers	3.2%	Healer and sangoma	2.7%
Carpenters and jointers	3.1%	Personal care of children and babies	2.6%
Construction and maintenance labourers	2.2%	Shop salespersons and demonstrators	2.6%

[263] Formal citations are provided against the statements set out in **Annexure 7**. The sources contributing to this assessment, formally detailed in the references section to this paper, are: Altman (2008), Blaauw *et al* (2006), Blaauw (2011), Davies & Thurlow (2009), Essop & Yu (2008), Hovsha & Meyer (2015), Muller (2003), Neves *et al* (undated), Sustainable Livelihoods Foundation (undated), Valodia (2007) and Willis (2009).

[264] Altman, M (2008), "Formal-informal Economy Linkages", Employment Growth & Development Initiative, Human Sciences Research Council, April, page 28

[265] This suggests the importance of engagement by the designers of this scheme with these workers or the organisations representing the interests of these workers. This should include efforts to support the further development of representative organisations.

Without implying that periods of relatively high earnings represent extraordinary prosperity, this income volatility nevertheless suggests the potential demand for a short-term, flexible savings vehicle that could facilitate consumption smoothing over time. This appears to have been confirmed by research among the members of this group (see DSD, 2014: 6).[266]

4.2. Quantitative Analysis

Quantitative analysis of the data available in the quarterly LFSs (**Annexure 5**) and annual GHS (**Annexure 6**) has been undertaken. The key challenge with the analysis of both of these surveys is the inconsistent, and varying over time, definition of informal economy workers (as also indicated earlier in this report) and inconsistency in the data.

The LFS, for example, reports a total of between 2.9 million and 3.0 million informal-economy workers. This total has shown a gradual increase since 2010. But some of this increase may be attributable to improved levels of detection, as designers of the survey have begun to include workers in formal companies that are employed informally.

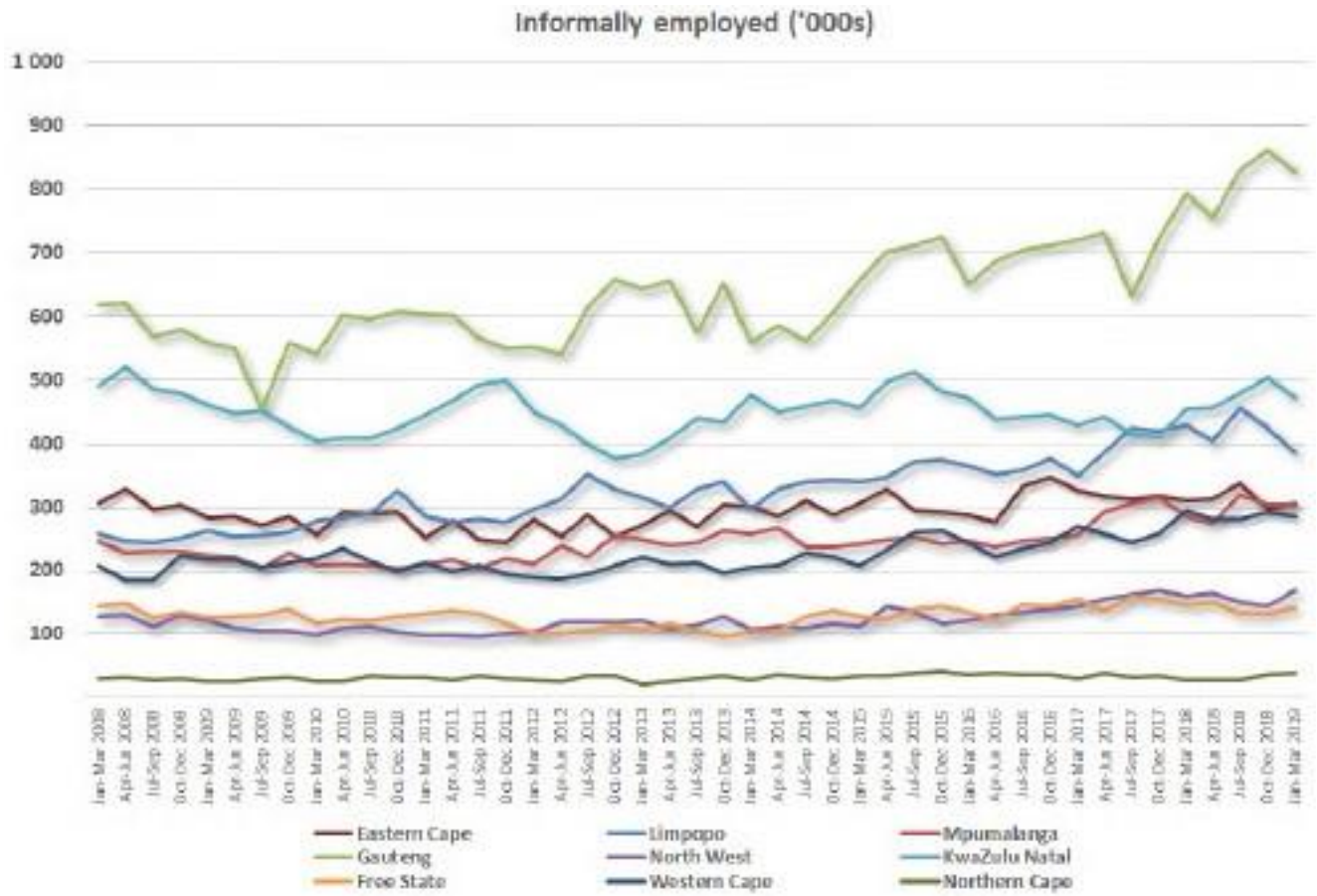
Though estimation errors from quarter-to-quarter should not be ignored, the LFS hints at an environment of dynamic change over time (see Figure 3 and further descriptions in **Annexure 5**. Explaining these changes, however, can be difficult. While it is tempting, for example, to describe the increase in informal-economy employment in Gauteng over the last few years in terms of increasing informality, this is not necessarily the case. Increases in informal-economy employment in urban areas may be associated more with broad-based increases in workers moving to the cities to take up informal employment rather than to an increase in the proportion employed informally.[267]

Observation of the data indicates that, among females the proportion of all employees that work informally appears to have fallen between 2010 and 2014 and then stabilised, but among men these rates seem to have shown a steady increase. The corresponding rate of informal employment (as a share of all employment, males and females combined, agricultural and household workers excluded) suggests enduring differences across provinces in employment dynamics but reasons for these differences are elusive.

Figure 3: Informal-economy workers by province

[266] DSD (2014), "Department of Social Development: Inclusion of informal workers in the reform of retirement provision in South Africa", Consolidated Report, prepared by Oxford Policy Management in partnership with Callund Consulting

[267] The population of Gauteng has also grown faster than the country as a whole, from 8.8 million in 2001 to an estimated 14.7 million in 2018, a compound annual growth rate of 3.06%, against the corresponding national average of 1.50% for the same period (Stats SA, http://www.statssa.gov.za/, accessed 7 June 2019).



In summary, on LFS definitions, some 2.9 million to 3.0 million employees work in the informal economy to which might be added a proportion of the 1.3 million noted as working in households and the 800 000 to 900 000 in agriculture. A slight increase in the proportion of all workers that are occupied in the informal economy has been detected.

The GHS asks a series of questions that seek to confirm the formality of employment, so more cases of informal employment are likely to be identified along with a mild risk of overcounting through self-reporting. The GHS reports between 3.2 million and 3.3 million self-employed workers in mid-2017.

Under-counting is a material risk in both cases, for a number of reasons:

- The LFS counts separately more than 2 million employees based in households or working in agriculture, some of which are likely to be informally employed without being identified as such,
- Neither of the surveys attributes employees to both formal and informal categories at the same time, though evidence exists that a number of workers operate in both (Neves *et al*, undated),[268]
- A number of workers are unlikely to be captured effectively in either of the surveys (Muller, 2003),[269] for example, those engaged in purely survivalist activity and those who work too few hours per week to be counted.[270]

Not all of this under-counting should be taken explicitly into account when considering the number of workers eligible for the scheme under consideration or inclined to participate. Firstly, double-counting these individuals is possible. Second, at the margins of survivalist strategies are individuals who, while certainly eligible for participation in the scheme, are unlikely to participate by virtue of their poverty.

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[268] Neves, D, M Aliber, J Mogaladi & A du Toit (undated), "Self-employment in South Africa's Informal Sector: Prevalence, Prospects & Policy", Institute for Poverty, Land and Agrarian Studies, University of the Western Cape

[269] Muller, C (2003), "Measuring South Africa's Informal Sector: An Analysis of National Household Surveys", Working Paper 03/71, Development Policy Research Unit, University of Natal, January

[270] Illegal activities are typically also not part of a survey.

The GHS data appears to confirm the findings of a number of researchers that the earnings of informal-economy workers are poor (some R2 330 monthly, 2017 terms) and that the average for women (R1 880) is substantially below the corresponding average for men (R2 690). Differences by age appear to exist, but as these differences do not exhibit a reliable pattern, these cannot be used to conclude that age counts against or in favour of income. Average earnings by province do show material differences, but are not utilised in the financial modelling described in this document as provincial differences are not taken into account in the model.[271]

4.3. Summary of Modelled Membership

The discussion that follows aims to reconcile membership from various sources to develop a stable base from which financial modelling may proceed.

4.3.1. Total membership

Between 2.9m and 3.0m South Africans are working informally, in addition to 1.3m workers in households, not necessarily domestic workers, and between 0.8m and 0.9m in agriculture, not all of whom are working informally.

The GHS 2017 suggests 3.26m informal-economy workers. It is proposed that this underestimates somewhat the total number of workers operating full-time or part-time in the informal economy. It is estimated, by reference to insights gained from a variety of sources, that a total of 3.9m should be
regarded as working, for some part of a year, in the informal economy, made up as follows:

- 2 950 000, as defined by the average of recent LFS quarterly reports; plus
- An additional 700 000 in households, excluding the 650 000 domestic workers registered to the UIF who are assumed to be formally employed and erring on the high side; and
- 250 000 in agriculture, whom it is assumed do not have formal employment contracts.[272]

This makes no explicit allowance for survivalist workers or those counted in the formal economy who are also working informally, but errs on the high side against both LFS and GHS figures. As GHS information includes insights on earnings, for the purposes of filling in the details, GHS is used, rating up by just under 20% to obtain the 3.9 million considered appropriate in total. All figures expressed in the analysis that follows are calculated after this upward adjustment.

4.3.2. Earnings profile

The GHS proposes average monthly earnings of R2 330 per person working in the informal economy, compared with R8 050 for their counterparts working in the formal economy and just under R200 for the 23.1 million cases with identifiers, *"Do not know"*, *"Not applicable"* or *"Unspecified"*, which covers mainly unemployed individuals.

The average of R2 332 may include income from social grants.[273] The number is, however, no larger than would be expected from CPI adjustments of the qualitative data of Essop & Yu (2008) and is somewhat lower than the corresponding data ranges (averages not provided) of Altman (2008). For these reasons, the monthly earnings of the GHS 2017 survey are regarded as appropriate, also for extension to the full set of 3.9m individuals.

4.3.3. Occupational mix

Detailed information on the employment and earning characteristics of workers in the informal economy is not available. Determining the mix of occupations from a number of different sources is difficult. While a wide range of sources has been consulted, it is not clear how reliable these sources are and to what extent the data utilised for each of these studies may be regarded as representative of the millions of workers participating in the informal economy. The GHS data states that 2.74 million of the self-identified 3.26 million informal-economy workers (that

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[271] More precisely, the rates of take-up across provinces is assumed to be such that any income differences between provinces that may exist are not material to the financial projections.
[272] This number feels rather low, given a total of between 800 000 and 900 000 workers in agriculture and anecdotes of poor pay and working conditions, but it reflects the information available through a review of the available literature.
[273] Some recipients of child grants and old-age grants may identify themselves as working in the informal economy.

is 84%) describe themselves as employers or own-account workers. This is not easily reconciled with the qualitative information on informal-economy workers assessed. Blaauw (2011), for example, states that 27% of informal-economy employees work in households. Some of these are indeed self-employed but many of them are not.

Combining the four available sources of information and smoothing the results, the mix of workers by occupation type is proposed in **Figure 4**.

Figure 4: Proposed profile of informal-economy workers for modelling

	Numbers			Percentages			Average Income		
	Male	Female	Total	Male	Female	Total	Male	Female	Overall
Agriculture	263 050	13 853	276 904	12.2%	0.8%	7.1%	1 808	1 352	1 785
Community	73 017	219 188	292 205	3.4%	12.6%	7.5%	4 445	3 325	3 605
Construction	394 077	57 335	451 413	18.2%	3.3%	11.6%	2 486	1 860	2 407
Finance	81 551	81 603	163 154	3.8%	4.7%	4.2%	3 892	2 911	3 401
Manufacturing	269 688	29 984	299 672	12.5%	1.7%	7.7%	3 308	2 474	3 224
Mining	116 034	1 173	117 207	5.4%	0.1%	3.0%	4 271	3 195	4 260
Households	409 653	614 866	1 024 519	18.9%	35.4%	26.3%	1 390	1 040	1 180
Transport	211 881	4 327	216 208	9.8%	0.2%	5.5%	3 937	2 945	3 917
Trade	344 996	713 723	1 058 719	15.9%	41.1%	27.1%	2 713	2 030	2 252
	2 163 947	**1 736 053**	**3 900 000**	**100.0%**	**100.0%**	**100.0%**	**2 691**	**1 884**	**2 332**

This figure is considered a reasonable representation of the numbers and average earnings of informal-economy workers, separately for males and females and separately by each of the working classifications. This data has been used for modelling purposes, as described in Section **6**.

5. BENEFIT DESIGN

The discussion that follows sets out the process utilised to arrive at the recommended design of the proposed arrangement, covering:

- Methodology, criteria and considerations;
- Benefits;
- Contributions;
- Vesting and withdrawals; and
- Participation incentives.

The modelling described in Section **7** describes how the adequacy and sustainability of the recommended benefit structure has been tested.

5.1. Methodology, Criteria and Considerations

The design of any pension arrangement is complex, calling for evaluation across an extraordinary number of decision points and parameters. Choices concerning this particular arrangement are further complicated by three additional factors concerning the earnings characteristics of those working in the informal economy, who:

- Suffer substantial variation in income;
- Experience long periods during which they have no income at all; and
- May move frequently between the formal and informal economies, sometimes operating in both at the same time.

Simultaneously evaluating a multiplicity of trade-offs is complex. If optimisation were based on purely technical grounds, it would be difficult enough, but ideological concerns and considerations from outside of the scheme itself further complicate the design process. How does one allow for the constitutional imperative of equity of treatment between groups? How does one evaluate the pros and cons of defined benefit and defined contribution designs where the income upon which the former rests is inherently uncertain, volatile and potentially subject to manipulation by participants? How should pre-existing designs, the social old age grants or private pension funds, informal arrangements like stokvels and others based on systems of mutual support, or those that have been considered separately like the draft National Social Security Fund, be taken into consideration? What types of metrics may be considered appropriate for comparing alternatives where the uncertainty in the earnings pattern of covered workers is so considerable?

The sheer complexity of the trade-offs, the enormous spread of available design variations and the multitude of assumptions involved in financial modelling of the scheme makes such modelling inappropriate as a primary tool for evaluating the available design options.

5.1.1. Broad approach to selecting and refining the design of the scheme

An iterative approach to addressing this complexity has been adopted:

1. **List the elements of the design**. These include retirement benefits, for example, death and disability benefits, early access to accumulated saving, eligibility for membership, the framework for contributions and the system of incentives.
2. **Identify the available alternatives concerning each of these elements**. For example, the formula for determining the benefit on retirement could be intrinsically defined with reference to earnings (defined benefit) or accumulated contributions (defined contribution), or a hybrid model could be utilised. A proportion of the total benefit available at retirement may be available as cash at that date with the balance taken as an income, itself subject to a number of design rules and parameters.
3. **Establish a set of criteria for evaluating each of the alternatives**. For example, the advantages and disadvantages of defined benefit, defined contribution and a hybrid model are identified. These criteria are set out in **Annexure 8**.
4. **Define and assess a number of prototype designs**. Collectively covering a range of alternatives, and taking into account the rationale put forward along with existing proposals, four designs are described and thoroughly evaluated. The insights derived from this process are summarised. This material is set out in **Annexure 9**.
5. **Put forward and evaluate a design that satisfies the insights derived from the process**. The lessons learned from the evaluation of alternatives are used to construct a recommended design. This design is described in the discussion starting in Section **5.2**. The process of evaluation includes the assessment of adequacy and sustainability, as described in Section **7**.
6. **Refine and finalise the parameters**. The evaluation typically identifies flaws in the parameters initially chosen for evaluation. The model is used to refine these parameters, as described in the discussion that follows in this section.

This approach permits (1) a gradual developing appreciation of those features of the scheme design most appropriate to the members for whom the scheme is intended followed by (2) an incremental refinement of the parameters that put these features concretely into place.

5.1.2. Determinants of the choice of design alternatives chosen for review

The four designs selected for assessment are prototypes. Each of them represents a serious effort to meet the needs of the members of the envisaged scheme but none of them were selected on the basis that they were considered a perfect effort to do so.

How were these four options chosen? A number of factors were taken into account as part of this process. Key considerations included putting together a mix of alternatives that collectively exhibit a suitable range of features and giving due consideration to those possibilities already put forward in earlier papers.

The papers considered for this purpose were the National Social Security Fund (NSSF) discussion paper by the Inter-department Task Team (IDTT, 2012)[274] on Social Security and Retirement Reform and a study published by the Department of Social Development (DSD, 2014) that explicitly considered the design- and operational alternatives of an arrangement focused on informal economy workers.[275] Three of the proposals come from those papers and the fourth arose out of a motivation to examine the feasibility of a final-salary defined benefit system.

Alongside these were a number of other considerations:

- Examples from other countries and international developments containing standards and guidelines, particularly those that impact the design of systems targeting informal-economy workers;
- Coherence with the corresponding system of social old age grants in South Africa;
- Consistency with the constitutional framework, particularly in respect of the equality of treatment of participating members working respectively in the formal and informal economies; and
- Consideration of the likelihood of workers moving between the formal and informal economies, through simultaneous participation in both or through shifts between participation in one and the other over time.

5.1.3. Determinants of financial viability

The scheme must be financially viable, in two ways. First, it must be sustainable, in the sense that, in the long-term, the cost of benefits and administrative expenditure is equal to or lower than the corresponding contributions, at acceptable cost to government.[276] Second, it must be adequate, in the sense that, under realistic assumptions regarding contributions, expenses and investment returns, the scheme provides benefits that are regarded as sufficient to meet its underlying objectives.

Adequacy is important not just in fact but in perception. Members, in other words, must buy into the concept, find the arrangement attractive and actively participate in it. Only the members themselves ultimately judge the appropriateness of the scheme to their needs. The Department of Social Development (DSD, 2014) cites the following elements of a benefit structure that prospective members indicated would enhance the attractiveness of a scheme for informal-economy workers:[277]

- Benefits are provided on death and disability prior to retirement;
- Contributions are flexible in the hands of members to allow for the inherent variability of the income of workers;
- Incentives to participate are granted through providing a greater benefit in return for greater contributions;
- Accumulated rights to benefits are preserved in those instances in which contributions cannot be paid for an extended period;
- The scheme is administered through central government not municipal authorities;

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[274] IDTT (2012), *Comprehensive Social Security in South Africa Discussion Document (Version 11.9)*, Inter-departmental Task Team in Social Security and Retirement Reform, South African Government, March

[275] DSD (2014), "Department of Social Development: Inclusion of informal workers in the reform of retirement provision in South Africa", Consolidated Report, prepared by Oxford Policy Management in partnership with Callund Consulting

[276] This cost may be explicit, for example, the expenditure of setting up or running operational infrastructure or the value of incentives provided to members. It would also be implicit or conditional, for example, the potential cost of providing a guarantee that the investment returns do not drop below a stipulated level.

[277] DSD (2014) 6

- It is identifiable and widely recognised as a legitimate government initiative, and
- it encourages rather than forces participation, through providing information and education.

Thorough consultation with these potential members prior to launch is regarded as critical to the success of the scheme.

The discussion in the next subsection and those that follow it builds on the foundation work described in the appendices, the criteria for evaluating design alternatives (**Annexure 8**) and the analysis of the alternatives (**Annexure 9**), which leads to a set of lessons learned through the process. These lessons are applied in turn to each of the design elements in turn. These elements are: the benefits, the contributions, the system of vesting and withdrawals and the set of participation incentives. Section **5.6** provides a summary of the recommendations. All of this is supported by the financial modelling described in Section **7**, but referred to from the discussion below.

5.2. Benefits

The first part of the discussion considers the benefits that the scheme is to provide to its members. This includes details of the underlying formula used to determine the overall quantum of benefits and the form in which benefits are paid, as a lump sum or income, for example and, if in the form of an income, flat or increasing over time. It also covers all type of benefits payable under the scheme, not just those that are due on retirement. The discussion starts by summarising the lessons learned from the analysis of alternatives, the details of which are set out in **Annexure 9**, after which it considers the available options and sets out a recommendation.

A number of those working in the informal economy, and contributing to this arrangement, are likely also to work formally for some time, either over different working periods, or simultaneously. These members would then be eligible to receive pension benefits under three arrangements:

- The social grants system (if they currently meet the means test requirement), non-contributory and paying a flat monthly benefit regardless of working history;
- The defined benefit informal-economy scheme, which pays a final salary based on the number of contributions paid and the average earnings (in reality, contributions) paid over the last five years; and
- The national social security fund (as envisaged by the IDTT), which pays a career average pension based on formal-economy earnings (also contributions) and a system of accrual.

It is proposed, on the basis of equality, that members be permitted to draw an income from all three of these sources simultaneously. As proposals for the removal of means-testing of social grants are already in place, the basis for any offsetting, with their associated disincentive impacts, is weak.

5.2.1. Discussion of attributes

The analysis of the alternative prototype arrangements suggests that:

- Retirement benefits should be prioritised over the benefits payable on other events, such as death or disability prior to retirement, because this approach underpins the primary function of the scheme and ensures that, as far as possible, the adequacy of these benefits is sufficient to render participation in the scheme worthwhile to its members;
- A defined benefit type of scheme is attractive (refer to the definitions in **Box 1**) but exceedingly difficult to deliver under the circumstances, exposing government to considerable financial risk; defined contribution arrangements provide a tangible account with growth that can be monitored and a link between contributions and benefits; a hybrid scheme that combines elements of defined benefit and defined contribution arrangements would be helpful in balancing these objectives, if feasible;
- Smoothed investment returns under a modified defined contribution scheme are attractive if they can be delivered at acceptable risk to government and to the members of the scheme;

- Survivor- and disability benefits should be provided on the respective events of death or disability prior to retirement, but this should be achieved at reasonable cost, to protect the prospects of reasonable retirement benefits, and designed under the premise (as proposed under the NSSF) that these benefits ought to be no more than sufficient to facilitate a transition to stable living conditions, albeit adapted to the changed circumstances under which these benefits are being provided;
- Early access to accumulated saving would considerably enhance the attractiveness of the arrangement to the intended participants, but this should be considered only if it were possible to offer it without unduly compromising funding for the other benefit priorities; and
- Retirement benefits should be payable primarily in the form of an income, suggesting that, except on administrative grounds, devoting a proportion of the accumulated saving to a lump sum at retirement in addition to providing early access to this saving may unduly compromise the funding for other forms of benefit.

Box 1: Design fundamentals: defined benefit and defined contribution

The income payable in retirement under a *defined benefit* arrangement is expressed with reference to the corresponding income of the member prior to retirement. This relationship may be described in a number of different ways. Pertinent pre-retirement income, for example, may be the income earned in the year prior to retirement or it may be averaged over a number of years running up to retirement, say three or five, or it may be averaged over a working lifetime, typically with adjustments for inflation. The first and second alternatives are usually referred to as *final salary* and the third as *career average*.

The benefit formula typically involves a rate of accrual under which each completed year of contributions provides a stipulated percentage of the pertinent pre-retirement earnings. If this percentage were 2%, for example, then 15 years of contributions would provide for an income in retirement of 30% of the stipulated pre-retirement earnings.

Members typically appreciate the certainty of income in retirement but this approach involves an element of risk to the ultimate guarantor of the scheme because the mix of members and their earnings pattern may render the balance of contributions and benefits unsustainable. This arrangement may also be regarded as inherently inequitable to those who are less likely to survive until retirement, on average the lower-income members of the fund who suffer higher rates of mortality.

Under a *defined contribution* structure, the contributions payable by members are expressed typically as a percentage of earnings but the corresponding benefits are known only at retirement, when the accumulated saving is converted into an income. The sustainability of the arrangement is generally not a problem because the commitment to members is equal to the contributions received (plus investment returns, less expenses). Members may appreciate the tangibility of the personal account, but they bear significant risk associated with fluctuating investment returns and the rate at which this account may be converted to an income at retirement.

Hybrid arrangements combine some of the respective features of defined benefit and defined contribution designs, providing to members a mix of the advantages and disadvantages of each. prospects of reasonable retirement benefits, and designed under the premise (as proposed under the NSSF) that these benefits ought to be no more than sufficient to facilitate a transition to stable living conditions, albeit adapted to the changed circumstances under which these benefits are being provided;

5.2.2. Alternatives and recommendations

Possibly the most important design issue to resolve is the question of defined benefit, defined contribution or something in between. Defined benefit arrangements are frequently utilised for social security arrangements because they provide income in retirement that is related in some meaningful way to the corresponding income of

the member immediately prior to retirement.[278] These schemes convey a sense of equity as successive generations working in similar occupations over their working lives can expect similar levels of income in retirement.[279]

Defined benefit arrangements tend to discriminate against lower-income members, however, who are less likely to reach retirement, unless the scheme provides generous survivor benefits. The inequity feature is not the primary disadvantage of a defined benefit arrangement in this case, however, where the scheme is intended for workers in the informal economy. Defined benefit arrangements work well in conditions of full employment and stable occupations. They are not as well suited to environments of unstable and interrupted income. In fact, they are very difficult to design for informal-economy employees whose income is ill-defined and can only realistically be inferred from their contributions on the basis of some assumed rate of contribution. That in turn renders the scheme highly vulnerable to moral hazard as members take advantage of opportunities to utilise the formula to their benefit.

For these reasons it is difficult to conceive of practical and equitable ways to manage the scheme on the basis of a defined benefit formula. Some of the disadvantages of defined contribution arrangements nevertheless need to be recognised and overcome. It is possible to smooth investment returns, for example (see **Box 2**), without subjecting the ultimate guarantor to undue risk. This should be undertaken by holding back a portion of investment returns in good years and releasing them when these returns are poor or negative. The basis upon which this is undertaken should be established at commencement and reviewed from time to time.

The retirement age of the scheme is a key determinant of the expected adequacy of benefits to members. The possibility of setting an age as high as 65 has been considered as it improves the prospects for good benefits. The analysis described in Section **7** shows the considerable benefit to members of retiring later. The expected income after retirement for a typical female member of this scheme retiring at age 60 is 37% of the corresponding expected earnings immediately prior to retirement. If retirement is deferred until age 65, this percentage is estimated at 51%.

Box 2: Smoothing Investment Returns

Defined contribution arrangements are based on the premise that the risks associated with investment returns lie with the members. Contributions are paid into accounts that are notionally attributable to members and the investment returns earned on the underlying assets, whether positive or negative, are credited to these accounts.

The design of this scheme is different. It aims to protect members from poor investment returns by smoothing these returns over time, holding a little back in good years in order to support the corresponding returns in very poor years. The mechanism could work in practice as described in the following paragraph.

When investment returns over the portfolio in any given year are positive in excess of the rate of inflation, for example, only 75%, say, of this excess should be credited to members, and the balance held back. When returns are below inflation but above zero, they should be credited in full. When returns are below zero, then member accounts should be held constant, the shortfall being funded from the excess of prior years.

The ultimate guarantor of this arrangement is the government. The parameters actually utilised should be subject to regular review by the actuary to the scheme to keep acceptably low the probability of government support for the returns of the scheme.

On grounds of consistency with the age of eligibility for social old age grants and recognising the challenging working lives of workers in the informal economy, however, it is recommended that retirement be permitted from the age at which social old age grants may first be received, currently age 60. Members should be permitted to postpone the age at which income is first drawn, boosting their retirement income in the process.

[278] For an employee who has worked for 40 years and is eligible to a final-salary retirement income accruing at a rate of 1.5% per year of contribution, the income payable at retirement is equal to 60% of the corresponding income immediately prior to retirement, frequently sufficient to sustain a reasonable income in retirement because living costs are typically lower than during the working years.

[279] The same is not true of their counterparts in defined contribution arrangements, whose retirement income is dependent on the state of the investment markets, which can fluctuate significantly over time.

Members of defined contribution arrangements are also subject to fluctuations in the rate at which their accumulated accounts are converted to income at retirement. These fluctuations are also attributable to market movements as a counterparty must convert the lump sum to an income at prevailing interest rates.

It is recommended that income in retirement is determined on the basis of a published set of annuity rates that are underpinned by a guarantee provided by the scheme and underpinned by government. Annuity rates are to be guaranteed for each calendar year and any change to these rates is announced at least six months in advance. The modelling described in Section **7** distinguishes between the respective mortality experiences of men and women, but the principle decision not to distinguish between these rates may be considered. Annuity rates should in practice, however, be set based on the experience of the scheme, to reflect the shorter-than-average life expectancy of the members of the scheme. Such an approach is to the benefit of the members. The annuity grows at the annual rate of price inflation.

It is further recommended that the part of the accumulated retirement benefit that is not accessible to members for early withdrawal (see the discussion of vesting and withdrawal, Section **5.4**) is payable only in the form of an income. This is to be waived only under those circumstances in which the value of the accumulation is such that the income due is less than a pre-stipulated threshold that would make administration of the payment impractical. This threshold should be stipulated as a percentage of the old age grant so that it changes automatically with the value of the grant. The recommended threshold percentage is 25 percent of the old age grant, in line with the maximum level of subsidy payable in respect of contributing members.

To protect a surviving spouse in the event of the death of the member after retirement, this income, it is recommended (1) is subject to a guaranteed minimum period of five years, and (2) is converted to a spouse's pension, at a rate of 50% of the original pension, on the death of the main member (after the guarantee period) until the corresponding death of the spouse.

Does this combination of benefits provide an adequate retirement to members? Allowing realistically for rates of adoption by members and assuming that members do not withdraw anything prior to retirement but utilise all of their savings at that date, the average income at retirement for women aged 60 is estimated at 37% of the corresponding income prior to retirement, with 90% confidence intervals of 24% to 51% (see the details in Section **7**). For men aged, the corresponding average ratio is 41% and for women and men retiring at age 65, the averages are 51% and 55% respectively. These are not substantial, but are in line with the levels regarded by the International Labour Organization as acceptable retirement outcomes. Note, however, that they are not guaranteed.

The main reason for the differences in the respective ratios for men and women is the acknowledged difference in the life expectancies of men and women. Other factors being equal, women are expected to live longer than men. The same amount saved up until retirement needs to last longer for women and so the equivalent income is lower. It is well understood that, notwithstanding the life-expectancy argument presented here, such an arrangement may not be regarded as treating women equitably.[280] The financial modelling in Section **7** and the table of ratios provided in the Executive Summary show the differential results for men and women, were such differences permitted, and the corresponding common ratio for all members on the assumption that a unisex approach to annuity rates were required.

Benefits to surviving dependents in the event of the death of the member prior to retirement are payable, but the cost of this benefit, together with the corresponding cost of the disability benefit, is limited in order to retain the intended focus of the scheme on retirement benefits.

It is recommended that the share of the resources of the fund ear-marked for retirement should be set at a level of 80%, with the balance of 20% available for the provision of other benefits, and administrative costs payable by government.

The appropriateness of this 80/20 split has been modelled. Increasing the 20% ear-marked for the provision of risk benefits to 40%, for example, would allow for a doubling of the amount of the death- or disability benefit specified below (or an extension of the term over which death benefits may be paid). This could only be achieved, however,

[280] Gender-based annuity rates in private-sector arrangements have been outlawed for some time in the European Union.

by reducing the corresponding proportion of contributions that are directed to retirement saving, from 80% to 60%. That would reduce the expected average replacement ratio for women from 37% to 28%.[281] A compromise between these respective positions is possible, with a 70/30 split between retirement and risk benefits. This, it was felt, would still unduly compromise the potential for the scheme to deliver an average replacement ratio of around 40%, which is regarded as an appropriate target under international norms, particularly those specified by the ILO.

In line with the corresponding recommendations of the NSSF, but limited on the grounds of affordability constraints the benefit to dependent children is recommended payable until age 18. The corresponding benefit to the spouse is payable for a limited time, on the same grounds as proposed by the IDTT:[282]

> *"Surviving spouses would receive a benefit for a limited period of time, to assist the household's adjustment to the loss of earnings."*

The term recommended for the income benefit to the surviving spouse is two years, with the balance of this period payable to other surviving dependents should the spouse die during this period. It is recommended that the income payable to dependents is linked to the contributions paid by the member in the previous three years, incentivising active participation in the scheme.

The benefit payable is recommended as a monthly income to the surviving spouse equal to one-eighteenth of the total contribution paid by the member (plus the corresponding government subsidy received) over the last three years prior to death. Payments in the second year of receipt are recommended to be higher than the corresponding payments in the first year by the rate of price inflation at the time. Income payable to surviving minor dependents is payable to each at a rate of half the corresponding benefit to the spouse, limited to four children. These benefits are not payable beyond the 18th birthday of any of the dependents.

Where the total monthly income payable to the surviving spouse and minors is less than 25 percent of the old age grant at the time, it may be converted to a lump sum and paid all at once.

Death benefits are not high. The surviving spouse of a member earning an average of R2 769 monthly over the previous three years and contributing 10% of earnings to the scheme every month over that period would receive R1 326 monthly for two years, with an inflation-related increase at the beginning of the second year. Each child would also receive R663 monthly until the end of the two years or the attainment of age 18, if earlier (see Section **7.2**). The benefit is constrained by the recommendation that the allocation to pension saving is pitched at 80% of the total contribution and aims to provide a measure of support for the period of adjustment that follows the shock of the loss of the bread-winner.

Tests have been carried out to determine the viability of extending these benefits. These are described in **Annexure 12**. If the period over which income is paid to the surviving spouse is extended from two years to five years, without adjusting the 20% share of contributions allocated to risk benefits, the risk-benefit pool is certain to go insolvent at some stage. The appropriate share of contributions that need to be directed to risk benefits under this design approach rises from 20% to 38%, reducing the allocation to pension savings to 61% and severely reducing the expected retirement ratio.[283]

A further alternative is considered, extending the benefit to children young dependents to the age of 23[284] On the basis both that the proportion of dependents in tertiary education is not known and that only supporting young dependents that are in tertiary education may be seen as discriminatory, the modelling includes all dependents up until the age of 23.[285] Combining a 5-year income period to the spouse and continuation to child dependents until

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[281] The corresponding ratio for men would fall from 41% to 30% and the ratio calculated on the basis that no discrimination in annuity rates is permitted would reduce from 39% to 29%.

[282] IDTT (2012), "Comprehensive Social Security in South Africa Discussion Document (Version 11.9)", Inter-departmental Task Team in Social Security and Retirement Reform, South African Government, March, page 22

[283] The female replacement ratio at age 60 would fall from 37% to 28%, the unisex rate from 39% to 30%.

[284] This is typically considered to recognise that children in tertiary education are financially dependent on their parents well beyond age 18.

[285] Different approaches to the issue are evident from other South African institutions. The *Unemployment Insurance Act* (UIA) defines this dependent as under 21 or under 25 if a learner and mainly dependent on the deceased (UIA, Act 63 of 2001, section 1: definition of "child"). The *Compensation for Occupational Injuries and Diseases Act* (COIDA) assesses only the extent of the

age 23 would require fully 59% of the contribution to be allocated to risk benefits.[286] The recommended balance between retirement- and risk-benefits is considered the most appropriate balance, with the primary objectives of the scheme in mind.[287]

A flat-rate funeral benefit has been considered but, at a level of benefit that is considered reasonable for a funeral, would represent a considerable additional cost to the scheme and hence a compromise on the capacity of the scheme to provide other benefits, particularly retirement benefits, at a reasonable level.

It is recommended that all contributions paid by the member throughout the term of membership of the scheme plus investment returns, are returned to dependents in the form of a funeral benefit. Assuming that the member had not withdrawn any of their accumulated savings, this benefit would amount to twice the level of the fund available for such withdrawals and could be significant.

The estimated funeral benefit for a member earning a monthly R2 769 monthly with a history of paying contributions for 10 years at a rate of 7.5% of income amounts to a little over R32 000 (refer to Section **7.2**).

Disability benefits are payable only on permanent disability. Paying only in the event of permanent disability reduces the costs of providing this benefit and the costs of assessing claims, since the state of permanent disability is objectively more straightforward to identify. The level of the disability benefit is, as for the corresponding benefit on death, determined by the contributions paid into the scheme by the member.

The monthly benefit, which is payable only in the event of total and permanent disability, is one-eighteenth of the total contribution paid by the member, plus government subsidy added, over the previous three years. A contribution to retirement saving is also automatically credited to the scheme accounts of disabled members. The contribution is equal to 10 percent of the income payable to the disabled member, without regard to the floor placed on the level of contributions payable (see Section **5.3.2**) as contribution collection costs are not relevant. Government incentives are payable into the account on the basis of the contribution made on behalf of the member, Disability benefits are paid monthly until the normal retirement age of the scheme, recommended as 60 and are subject to an automatic inflation-related increase.

Again, the benefit is not particularly large. Refer to the examples provided in Section **7.2**.

A lower threshold for the minimum payment is considered appropriate for disability benefits than for other forms of income. Where the monthly income is below 25 percent of the equivalent old age grant, it may be converted to a quarterly income at the option of the member, by multiplying it by a factor of three. Where the quarterly equivalent income would be less than 25 percent of the equivalent old age grant, it may be converted to a lump sum, at the option of the member, on rates determined by the actuary to the scheme from time to time, allowing also for the contribution to the scheme that would otherwise be payable, which falls away. The government incentives that would have been paid on the contribution are no longer payable, unless the member choose to make further payments to the scheme.

The total cost of benefits payable in the events of death or disability prior to retirement is targeted at 20% of the level of contributions paid plus government incentives added, leaving 80% to be directed to the provision of retirement benefits.[288] Regular actuarial reviews will assess the extent to which actual experience is consistent with this level. Benefit levels will be adjusted over time, it is recommended, with careful communication to members,

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financial dependence (COIDA, Act 130 of 1993, section 1: definition of "dependant of an employee"). The *Pension Funds Act* (PFA) contains no age restriction as regards child beneficiaries (PFA, Act 24 of 1956, section 1: definition of "dependant").

[286] This would reduce the replacement ratio for women at age 60 from 37% to 19%, on the assumption that gender-distinct annuity rates are used, and the corresponding unisex ratio from 39% to 20%.

[287] These calculations are carried out on the basis that the probability that the risk-benefit pool remains solvent throughout the period of projection to 2065 should be the same as under the base scenario, that is, around two-thirds.

[288] As noted below, it is recommended that the costs of administering the scheme are covered directly by government. An allowance has been made in the financial modelling for the monthly costs of administration as some cost is likely whether the scheme is managed in conjunction with the NSSF or not.

should this proportion fall below 15% or increased to above 25% of the total contributions paid and incentives received.

The financial viability of the risk-benefit part of the scheme is not dependent on the reliability of contributions received as the benefits are linked in value to the contributions received.

Indications are that the balance between contributions and benefits in the risk pool is finely balanced. The estimated probability that the risk pool remains solvency throughout the period 2020 to 2065, over which the modelling takes place, is 68%. (Refer to the details provided in Section **7.6**).

5.3. Contributions

The text that follows considers first the primary considerations affecting the level of contributions and then turns to discussing the alternatives and making recommendations.

5.3.1. Discussion of attributes

The following key considerations have guided the framing of the recommendations that follow:

- **Any form of mandate** regarding the regularity of the contribution or the level of the contribution expressed as a percentage of earnings would be impractical, unhelpful and a disincentive to enrolment and participation by workers in the informal economy;
- The **level and frequency of contribution should thus be flexible**, save for a rand minimum to ensure the administrative feasibility of the scheme;
- **Administrative arrangements should be tailored to the needs of the target group**, suggesting a range of cost-effective money-transfer channels that are convenient to these workers and that appropriately and effectively utilise the available technological solutions that would work best for these members, adapting as the range of solutions grows.

5.3.2. Alternatives and recommendation

As is frequently highlighted by the research that underpins this paper, the income earned by workers in the informal economy is highly volatile and generally low. Requiring, or even requesting, these workers to contribute a fixed proportion of their earnings to the scheme is impractical and pays little attention to the challenges experienced by these workers on a month-to-month basis.[289] If, on the other hand, appropriate incentives are provided for participation in the scheme, including a measure of access to accumulated savings, workers might themselves see the benefit of contributing to the scheme, if not on a regular basis then at least when able to and in the amounts possible.

It is thus recommended that workers be permitted to contribute to the scheme whatever they wish to, subject to the administrative constraints noted below, on a flexible basis. Contributions may be paid as frequently as wished, on multiple occasions in a month, for example, or once or twice a year, without limitation. No penalties are imposed on members who do not contribute for long periods. Members may also make further contributions into the *member* account (see the discussion in Section **5.4** on vesting) after the retirement date. Since charges are covered by government (refer to the recommendation below) member accounts are not eroded during periods of inactivity. No contributions are assumed to be required from employers.

Questions may be asked about the ability of the scheme to manage interruptions in the payment of contributions. The freedom of members to contribute as and when they wish to overturns the conventional thinking for an arrangement designed for members with stable occupations regarding interruptions to contributions. From the perspective of members, contributions may be paid as an when the member wishes to and, subject to a minimum payment to reflect administrative constraints, at the level selected by the member. While the scheme must be

[289] Fluctuations in income are, in many cases, sufficiently severe that, in poor months, workers cannot contemplate a contribution to the scheme and, in good months, workers might wish to set aside a relatively high proportion for retirement saving. Another practical consideration regarding the feasibility of a fixed monthly contribution expressed as a proportion of earnings is that workers typically would not even know what their earnings were at the end of a given month.

administered as efficiently as possible, recommendations in this paper call for government financing of the administration and the costs of administration are not adversely affected by the absence of a contribution.

Notwithstanding the voluntary nature of contributions, government should make every effort to encourage members to contribute. This should include explicit financial support and non-financial benefits like access to special services or skills development (see Section **5.5**). A variety of approaches should be used for this purpose, including mainstream media, but most critical for this purpose is constructive engagement with organisations representing the interests of these members. This should take place in advance of launch, to confirm the appropriateness of the design proposed in this report, and after launch, to provide channels for engagement with the members of the scheme.

Members must be granted convenient channels for making payments. These should include cash payments at offices of the South African Social Security Agency (SASSA) and South African Post Office (SAPO), money transfer payments through the systems available at supermarkets and electronic payments through the banking or mobile-money networks. As further alternative channels become available, every effort should be made to add this functionality to the scheme, for the payment of contributions, receipt of benefits and withdrawal of cash under the rules permitting flexibility of access to a portion of the contributions.

The cost of providing death- and disability benefits is recovered from the combination of member contributions and subsidies received and deducted when the contribution is received. This cost, as discussed earlier, is pitched at 20% of the total of contributions and subsidies. The balance of 80% of the member contribution is split equally between the *accessible member account* and the *frozen member account* (see **Box 3**). The deduction for risk benefits must be transparently disclosed to members. Frequent communication with members is an essential requirement of the scheme. All contributions received should be confirmed electronically to members and fund balances should be available on request, separately disclosing that part that may be withdrawn by the member (see Section **5.4**).

Box 3: Distinct accounts in the fund

Defined contribution arrangements establish notional accounts for members. Each account represents the financial interest of that member in the scheme. This particular arrangement has two accounts for each member, the *member account* and the *subsidy account*.

The contributions paid by members go into the *member account*. The amounts payable by government as an incentive to members to contribute to the scheme go into the *subsidy account*. The accounts are kept separate because members are permitted to access part of their accumulated savings, but only to a limited extent. They may not touch the balance in the *subsidy account* unless benefits are payable under the benefit structure. They may only access half of the balance in the *member account*. For this purpose, the member contributions are split into two parts, one of which, *accessible member account* may be accessed by the other member and the other part, the *frozen member account,* is retained by the fund to provide for benefits. Both parts of the member account are paid as a funeral benefit.

One constraint on premium-payment flexibility needs to be considered. Administration costs are proportionally most acute at the level of the contribution because scale effects are not possible on small contributions.

A minimum contribution of R50, exclusive of the administration cost and government subsidy, is proposed to manage the expenses of administration on small contributions. This contribution is equivalent to 10% of earnings of R500 and 5% of R1 000. While this threshold may need to be increased from time to time, such increases should be infrequent and communicated carefully and with sufficient advance notice for members to adjust their plans appropriately.

Clear communication to members is a critical part of operational delivery and is discussed further in Section **6.1**.

5.4. Vesting and Withdrawals

The issue of vesting and the potential for premature withdrawals are considered in general terms in the discussion that follows before setting out recommendations on these issues.

5.4.1. Discussion of issues

As the scheme under consideration is a modified defined contribution arrangement, vesting of benefits should not present any difficulties.[290] Defined contribution arrangements typically have liabilities – the accounting value of their commitments to their members – that are the same as, or very close to, the corresponding assets – the investments that back these commitments. Full vesting of contributions paid is thus theoretically possible.

Two complications to this principle arise in this instance:

- First, a part of the member account may not be available for access by the member, as discussed in the recommendations on withdrawals below. This portion is theoretically available but may not be paid out to members.
- Second, smoothing of investment returns means that the liability to members is not exactly the same as the assets available to back these liabilities. When returns have been strong, then a portion of these returns is not credited to member accounts, and assets consequently exceed the corresponding liabilities. The opposite is possible: after long periods of poor returns; the value of liabilities may then be greater than the corresponding value of the assets[291]

Feedback from potential members (see DSD, 2014)[292] strongly suggests that some form of access to accumulated retirement benefits would render the scheme more attractive to those considering contributing to the arrangement. This principle, which has precedent in international arrangements (see **Box 4**) and has also been advocated in a recent World Bank report[293] is strongly supported. It is nevertheless important to protect the essential qualities of the scheme to provide, first, retirement benefits and second, a set of supplementary benefits on death and disability prior to retirement. For this reason, also, for a scheme to provide both early access to accumulated funds and access to a proportion of accumulated savings in the form of a lump sum at retirement could compromise the key purposes of the arrangement. It would also be useful if the design could include some link between the contributions actually paid by an individual and that part of the accumulated fund that is accessible to him or her.

Concerning the conditions under which a payment is to be made, it may be considered appropriate to limit early access to those withdrawals required to meet specific needs of the member, a health-related crisis, for example. This appeals well to principles of fairness and matching to need, but it involves not only significant administration but considerable judgment. It is difficult to defend an administrative decision regarding access to funds that a member may regard as notionally or even legally theirs. It is considered preferable instead to establish an unambiguous set of rules that may be applied universally.

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[290] Smoothed investment returns present some challenges for the accessible member account that calls for a modified approach to investment management (see discussion immediately below).

[291] This has consequences for any part of the scheme under which members are granted the right to access their retirement savings. Members might act against the scheme by withdrawing funds at a time when the fund is in deficit on the basis that the value of the member account exceeds the corresponding value of assets. Sophisticated members could even use the fund as an investment tool.

[292] DSD (2014), "Department of Social Development: Inclusion of informal workers in the reform of retirement provision in South Africa", Consolidated Report, prepared by Oxford Policy Management in partnership with Callund Consulting

[293] The study recommends consideration by policy-makers of the following as an element of pension product design in the informal economy context (emphasis in the original): "**A combination of long-term pension accounts and short-term savings accounts.** A pension scheme savings account is, by nature, a long-term savings account. Informal sector workers need to save for 15–20 years to be eligible for pension benefits when they reach the eligibility age. Experience in countries in Africa and interviews with informal sector representatives indicate that a short-term savings account would make the pension scheme more attractive to informal sector workers. There are several reasons for this. First, a voluntary pension scheme needs to build trust, and knowing they have short-term access to their savings may help build this trust among these workers. This is substantiated by evidence in Ghana. When the informal sector pension scheme was first established, participants had the option of gaining access to 50 percent of their accounts six months after they started making contributions. On the day contributors were allowed to access their savings, they typically withdrew the short-term savings account. However, they returned it back into the account the next day. This appeared to be the way the participants tested whether they could actually access the savings. Second, the pension scheme could be made more attractive to informal sector workers by allowing them to use the short-term savings account as collateral for various financial transactions, including obtaining credit from MFIs, thereby making it easier for them to access financing. Third, the short-term savings accounts could be used by informal sector workers following idiosyncratic or covariate shocks." – Guven, J (2019), *Extending Pension Coverage to the Informal Sector in Africa* (Social Protection & Jobs Discussion Paper No. 1933) (World Bank) 42 – accessed at http://documents.worldbank.org/curated/en/153021563855893271/pdf/Extending-Pension-Coverage-to-the-Informal-Sector-in-Africa.pdf on 26 September 2019.

In summary, the principles that are considered appropriate to the design of the system of vesting and withdrawals are as follows:

- As far as possible, vesting should be immediate;
- Members should be granted access to a portion of the accumulating saving, on terms that are as clear as possible and involve as limited a set of conditions as may be permitted;
- The portion of the accumulated saving to which members should be granted access should be large enough to incentivise participation to individuals subject to a precarious existence and thus mindful of their need for liquidity, but small enough that the fundamental objectives of accumulation for retirement and other benefits should not be unduly compromised;
- The system under which early access to accumulated saving is permitted should be combined, if possible, with the corresponding rights of members to convert a part of their retirement saving, otherwise received in the form of an income, into a lump sum, and
- Members should not be able to game investment markets by withdrawing when the value of accounts exceeds the corresponding value of the underlying assets.

Box 4: International precedent for member access prior to retirement

The separate-account arrangement recommended for the scheme is not without supporting precedent in other countries. Under the informal-economy fund established in Ghana by the SSNIT (see Section **3.2.4**), members contribute to two accounts. The first of these is a Retirement Account, from which members may only withdraw in the event of retirement, death or disability. The second is an Occupational Scheme Account, from which members may make withdrawals subject to rules. A number of private-sector funds in Ghana have followed suit, offering arrangements to members of the informal economy facilitating similarly flexible contribution- and benefit arrangements.

The corresponding scheme recently launched in Rwanda does not split contributions into two accounts, but seeks to provide early access to accumulated savings subject to conditions (see Section **3.2.5**). Indications from policymakers in Rwanda are that members will have access to a limited portion of their savings, as long as this access is put to specified uses and members have contributed for a minimum period.

Providing early access to saving is regarded as an important feature of the scheme, and is also advocated in a recent World Bank study. The key disadvantage of the approach is that it undermines retirement saving. For this reason, it is considered prudent to limit the extent to which withdrawals are permitted. The design recommended for consideration in South Africa aims to recognise the feedback of the members of the targeted participants (DSD, 2014) that some access to accumulated saving is considered vital, but tempers the degree of access to protect early access to government subsidies

5.4.2. Alternatives and recommendations

A straightforward system of vesting and withdrawals

- Unambiguously labels that part of the accumulation of saving that the member may access; and
- Places no constraints on withdrawals from that labelled part of the accumulation.

The member's interest in the fund increases, at the time of contribution, from two sources of inflow, the contributions that he or she makes, which is payable into the member account, and any incentive that government provides in addition, which is directed to the subsidy account (see the discussion in Section **5.5** and **Box 3**). A strong argument surely exists that members should not be able to access, prior to retirement and at their option, any of the subsidy paid into the account by government. That leaves the question only of how much of the member contribution ought to be made available to them to take out of their account when they wish to.

The position taken is that half of the member's contribution, plus any investment return accumulated on that contribution, should be available for withdrawal, at the option of the member. If it is indeed the case that early

access to contributions represent a significant incentive to participate and contribute actively, then locking up a significant part of these contributions should be considered a compromise on this position.[294]

This nevertheless means that the probability of meeting adequacy requirements, in other words ensuring a significant income in retirement, is undermined. A trade-off is being made between:

- The benefits of locking away a portion of member contributions in order to increase the expected retirement income, compromising the potential for active involvement; and
- The benefits of encouraging greater participation by members through a comprehensive set of incentives, compromising the possibility of greater preservation of savings until retirement.

The view expressed here is that reasonable access to contributions is required to attract participation and that the compromise of access is appropriate. The position should be tested as part of the strongly recommended engagement with the community of potential participants.

In summary, none of the government subsidy, which is payable into the *subsidy account*, and half of the member contribution, which is directed to the *member account*, is accessible to the member for withdrawal, at any time before, at or after retirement. For this purpose, the *member account* will need to be split into two parts, the *accessible member account* and the *frozen member account*. Information on the balance in both accounts should be made available to members using appropriate communication media.

Practical limits are considered appropriate to discourage the treatment of the fund as a ready pool of cash, like a bank account. It is recommended, for this purpose, that withdrawals be limited to two a year. In the event that any members are tax-paying, it is recommended that tax incentives are not provided on contributions into the scheme – an explicit incentive is recommended (see Section **5.5** and that withdrawals may be taken free of income tax. A charge at the time of withdrawal may be appropriate to cover administration costs that are not directly related to the primary purpose of the scheme.

Smoothing of investment returns cannot be applied to the *accessible member account* as opportunity should not be given to members to game the investment markets. For this reason, however, a more conservative investment strategy may be appropriate to these members so that the balance in their account is not subject to undue fluctuations. This is recommended.

Finally, allowing members to draw some of their accumulated saving prior to retirement and permitting them to take a portion of their savings at retirement in the form of a lump sum risks a significant compromise on the central objective of the scheme, which is to provide an income in retirement.

It is therefore recommended that all of the assets accumulated in the *subsidy account* and the *frozen member account* must be converted to an income at retirement and that the corresponding assets in the *accessible member account* may be withdrawn at retirement in the form of a lump sum, left for later access or, at any time after retirement, converted into an income on the same terms available to the accumulation in the *subsidy account*.

The *accessible member account* is therefore structured as a flexible fund for drawing on at any time, subject to the twice-annual limits, during the working years, at retirement or thereafter.

[294] While the default position is that half of the contributions made by the member are directed to the *member account*, the member has the right to request that an additional portion of their contributions be directed instead to that part of the *member account* to which early access is not permitted.

5.5. Participation Incentives

The South African government plays a considerable part in supporting the social protection fabric of those living in South Africa. Total government expenditures on social grants is estimated at R192.7 billion for the 2018/19 financial year,[295]of which R70.5 billion is attributable to old age grants. These grants benefit South Africa's large community of elderly poor. Some R73.0 billion in tax revenue foregone in the 2016/17 fiscal year is attributable to the incentives paid on formal pension saving either to employees or employers.[296] These incentives benefit many of those working in the formal economy They are regressive in nature, because they benefit particularly those with higher incomes for whom the benefit is proportionally greater than for their lower-income peers. It is entirely reasonable that government provides financial support to encourage pension provision by workers in the informal economy.

Government incentives may be provided in a number of ways, with contributions, for example, on an ongoing basis through the working life of an individual, or in proportion to the benefits, providing a top-up of some form. Government incentives can also be provided in kind, with access to state services or other benefits that might not otherwise be available to these members. As members have flexibility to contribute when they wish to, however, direct financial incentives to do so are likely to be the most effective way to encourage participation and contributions by members.

Recommendations concerning direct incentives by government are put forward with caution. On the one hand, precedent for generous direct financial support is strong and long-standing, in the form of the regressive tax incentives for retirement saving described above. On the other hand, state resources are scarce, so money spent on incentives need to be as effectively applied as possible. Precedent for state support of micro-pension initiatives exists, in India and in Rwanda for example, but this is typically intended to be temporary in nature. Finally, though tax incentives are largely meaningless to workers in the informal economy, if incentives are to be considered on constitutional grounds, then a direct rand incentive, proportional to contributions paid is not in line with the system of tax incentives currently in place for workers in general. This may be the time for a broader change to a credit-based system of incentives for all forms of retirement saving to be considered.

It is suggested that incentives are provided in such a way that a higher contribution by the member results in a higher subsidy by the state, and that the incentive is progressive in nature, paying a proportionally higher amount for the first Rands contributed by a member and reducing with increasing member contributions. This need not be complex: contributions could be matched on a rand-for-rand basis up to a defined level, call this *Tier I*, and at half of this rate thereafter up to a ceiling, call this *Tier II*. Policymakers can then determine a maximum monthly subsidy and set the respective levels of the two tiers accordingly.[297]

Consideration has been given to setting the maximum subsidy at the level of the social old age grant on grounds of equitable treatment, but members contributing to the scheme at a monthly rate equivalent to the social old age grant have considerable disposable income available to them. This suggests that a lower subsidy level would be appropriate, of the order of one-quarter of the old age social grant. At the current grant level of R1 810, Tier I would be R226.25, Tier II would be R452.50 and the maximum subsidy of R452.50 would be payable for any member contribution of R678.75 or higher. This is high, equal to a contribution of 10% of earnings for workers with an income of R6 787.50 or more, but strikes a balance between the constitutional mandate to provide fair levels of financial support to the members of this scheme and the costs of such support.

It is recommended that the monthly subsidy to members be limited to the level of one-quarter of the social old age grant at that time, that one-for-one matching be provided up to one-eighth of the social old grant, Tier I, and that 50c in the rand be provided for contributions from Tier I to a level equal to three-eighths of the social old age grant, Tier II.

Members should be encouraged to contribute on a regular basis but not in a way to maximize the benefits available from the rand-for-rand top-up available for contributions applicable only up to Tier I.

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[295] National Treasury (2019), *Budget review*, 20 February 2019, accessed at http://www.treasury.gov.za/documents/national%20budget/2019/review/FullBR.pdf on 12 June 2019, page 56.

[296] National Treasury (2019) 121.

[297] Setting the level of Tier I equal to half of the proposed maximum subsidy and Tier II equal to 1.5 times this subsidy, but contributing at a contribution of between Tier I and Tier II at the rate of 50 cents in the rand would result in a maximum government contribution in line with the proposed maximum subsidy.

It is recommended that the subsidy is reckoned monthly on the full amount of the contributions directed to the fund over the course of the month. It follows that no subsidy is payable towards the account of a member who does not contribute during the course of a month, whether that member has a record of consistent contributions or has made only rare payments into the scheme.

Though the account of the member, specifically the member's *subsidy account*, is to be credited with the subsidy, government does not necessarily need to physically pay the subsidy into the fund. It is nevertheless recommended that it do so,

- running a transparent national budget,
- keeping consistent the accounting for the assets and liabilities of the fund (and the calculation of the investment returns and associated additions to member credits), and
- avoiding the risks associated with a growing debt to the fund and its members.

These incentives are nevertheless expected to represent a significant addition to government expenditure. The total cost to government of the subsidies and administration is estimated at R247m in the first year of operation growing to R1.67bn four years later (see Section **7.7** for short-term projections for the corresponding long-term picture.)[298] How should they be funded? A number of sources could be considered but the option recommended appeals to the constitutional provision of fair treatment of workers. available from the rand-for-rand top-up available for contributions applicable only up to Tier I.

It is recommended that the most logical of the available financial options to fund the cost of financial support for this scheme is a reduction to the incentives payable on formal-economy retirement contributions, most practically by reducing the annual rand cap that currently applies to these incentives. This would help to address the inequity of the regressive system of tax incentives and redirect some of this benefit to workers who have no access to such incentives at present, at least not through their informal-economy employment.

Government is in a strong position to provide other forms of incentives, training, for example, and initiatives that facilitate access to markets. Perhaps the key difficulty in this regard is identifying benefits to members of this scheme that could be denied to those who are not in this position.

It is recommended that the attractiveness of these and other benefits should form part of the engagement with these workers and their representative organisations.

5.6. Summary of Recommendations and Consideration of Disadvantages

The discussion that follows provides a synopsis of the proposed scheme design and concludes with a list of the key disadvantages of the proposed approach.

5.6.1. Summary of Recommendations

The table that follows summarises the recommended structure of the scheme.

[298] The subsidy portions of these Figures are estimated, respectively for 2020 and 2024, at R220m and R1.47bn.

Table 1:

DESIGN FEATURE	RECOMMENDATIONS
Benefits	
Main categories	
Retirement benefits	The scheme is structured as a DC scheme with smoothed annual performance. The retirement age is the age of eligibility for social old age grants and changes with any changes to that age. Annual returns, net of investment fees, are smoothed over time, using a model that is subject to review from time to time to avoid insolvency risks or an undue build-up of reserves. Annuity rates are guaranteed for one year with notice of change of at least six months. The annuity increases at the rate of price inflation. It includes a five-year guarantee and contingent spouse's benefit, unless waived at the option of the member, who must confirm that they are not married at the time of waiver.
Survivor & disability benefits	Survivor benefits on death prior to retirement are payable to surviving spouse(s) and children, for a maximum of two years and age 18 for children. The income payable to the spouse is one-eighteenth of the total contributions (plus government incentives) received in the three years prior to death. The income to each minor dependent is payable at half of this rate and limited to four recipients. Income received increases by inflation after one year. All contributions paid by the member throughout the term of membership of the scheme (excepting those already withdrawn), plus investment returns, are returned to dependents in the form of a funeral benefit. Disability benefits are payable on total and permanent disability until the scheme retirement age at a rate of one-eighteenth of the total contributions (plus incentives) received over the three years prior to disability plus 10% of this amount payable as a retirement contribution, also attracting government incentives as if it were a normal contribution.
Early access to saving	Contributions paid by members are allocated to a member account, split evenly between an *accessible member account* and a *frozen member account*. The balance of the *accessible member account* is available to the member for up to two withdrawals a year, before, at or after retirement. Incentives received from government are directed to a *subsidy account,* which, together with the balance in the *frozen member account*, is not accessible to members but converts to an income on retirement. The member may direct the scheme to allocate more than half of the member's contribution to the *frozen member account* should they wish to. Notice, once given, may only be altered after one year.
Form of retirement benefit	
Icome	All accumulated benefits except those in the *accessible member account* are converted to an annuity on the terms described above. Where the starting monthly income available from retirement is below 25 percent of the social old age grant, the full amount is transferred to the *accessible member account*, where it may be taken as cash at the option of the member.
Cash lump sum	The available lump sum is limited to that portion still left, at the time of retirement, in the *accessible member account*. It may be taken both at and after retirement and it may also be converted to a lifetime annuity on the terms then available to members.
Combination of options	Benefits must be taken primarily as an income, with cash available to the extent that the member account ear-marked for early access still has a positive balance at the time of retirement.
Portability	A legal framework needs to be developed to allow and stipulate conditions for the portability of benefits to other countries, when a member resides in another country. This can also, in addition, be regulated by appropriate bilateral agreements concluded by South Africa. It is recommended that a regulatory framework be developed to inform, facilitate and streamline inter-(public) scheme portability.
Membership and contribution arrangements	Membership is voluntary and contributions not subject to any rules. Discussion with representative organisations is strongly recommended in order to develop ways to encourage active participation in the scheme.
Contributions	
Formula for contribution level and regularity of contribution payment	Contributions are entirely voluntary, though subject to an administrative minimum of R50. In the absence of any mandate, engagement with representative organisations encouraging and facilitating participation and active contributions is critical. It is not required that regular contributions be made.

DESIGN FEATURE	RECOMMENDATIONS
Incentives & vesting	
Incentive arrangements and withdrawals	Incentives are considered in four areas: 1) Contribution subsidies provide 100% matching up to a Tier I ceiling, subject to a minimum contribution of R50, and a 50% match thereafter up to the Tier II ceiling, giving a maximum subsidy of 25% of the social old age grant. 2) Early access to accumulated saving in the *accessible member account* should be permitted, at or before or after retirement. 3) Other membership incentives should be considered and evaluated with representative organisations. These could include access to labour offices and skills-development opportunities. 4) Member contributions are not applied to fund administration costs. Benefit incentives are not provided.
Delivery mechanisms	
Administrative backbone	Governance standards must be consistent with best practice in social security arrangements and equivalent to the corresponding norms set by private pension arrangements and corporate governance standards more generally. The scheme is not recommended to fall under the jurisdiction of the Pension Funds Act, but to form part of the social-security regulatory framework. The scheme is recommended as a ring-fenced extension of the NSSF, sharing its operational infrastructure and resources but separately managed and accounted for. If the scheme is launched in the absence of the NSSF, then it must be independently governed and administered, using a public platform, though it may outsource selected parts of its system development and operations. The investment of assets may not be conducted directly by the fund, managing conflicts of interest, but could be outsourced either to the Public Investment Corporation, a range of private-sector counterparts, or a combination of the two along the lines of explicit mandates that take into account the specific interests of the members of the scheme. The cost of risk benefits is to be funded from the contributions paid by members. For purposes of good governance, notice of three months must be given of any changes to the share of the contribution payable towards risk benefits. Administration costs are covered directly by government, directly incentivising the provision of an efficient service.
Contribution receipt and benefit payment	The administrative function must facilitate the collection of contributions from members and payments of benefits to members or their beneficiaries in ways that are convenient to their needs. Mobile-money payments and other electronic transaction channels should also be available for payment of contributions and receipt of benefits. In this regard, the governing body of the scheme must make an explicit effort to utilise the electronic money-transfer mechanisms most suitable to the members of the scheme, considering new options in future as they are developed. Progress updates should be provided to members, in a manner convenient to them, on pertinent features of their accounts such as: • contributions paid in total, • the allocation of contributions to insurance and saving, • government contributions received, • funds available for withdrawal, and • pension income due if received immediately or projected conservatively to retirement

5.6.2. Key disadvantages

Notwithstanding the diligence of the process with which the process of establishing and refining the design of the proposed scheme has been undertaken, it is appropriate to consider the most important disadvantages of the approach utilised and the manner in which these disadvantages may be addressed in position the scheme to targeted members. Each of the potential issues are considered in the discussion that follows.

- **Adequacy of benefits.** The balance between providing for retirement and the other key events of death and disability is difficult to achieve. This is particularly difficult for members with uncertain and irregular incomes because this renders the metrics typically used for workers in the formal sector somewhat unhelpful. The balance recommended emphasises retirement saving as a key objective of the scheme and positions the corresponding benefits payable on death or disability as the minimum required to support the members and beneficiaries through adverse circumstances. This is further mitigated by returning to

dependents all member contributions paid up until the time of death, and not withdrawn by the member prior to then.

- **System design.** Questions may be asked about the appropriateness of a defined contribution arrangement for these members. Careful consideration has been given to the alternative of a form of defined benefit and discarded on the grounds of financial uncertainty or the potential for gaming by members. The large majority of such arrangements in other countries are based on a defined contribution formula.
- **Access to retirement savings.** Feedback has been received from potential members that early access to some part of contributions is important and international precedent for such an approach exists, Nevertheless, the extent to which members should be protected from eroding their future retirement benefits is difficult to establish and contrary arguments either way are easily put forward. It is believed that an appropriate balance has been found in giving members access to half of their own contributions and none of the subsidy provided by government.
- **Cost to government.** Similarly, arguments that either too much or too little is being asked of government can be put forward. Administration costs cannot realistically be carried by members (or their employers) and government is considered the most appropriate funder as it is also indirectly responsible for administering the arrangement. Concerning the subsidy structure, some may argue that the scheme is unaffordable. Others may suggest that, with constitutional requirements in mind, subsidies are inadequate. A balance between these conflicting arguments has been sought in the recommendations put forward but the possibility is acknowledged that the equity of the overall system of incentives for retirement saving ought to be reconsidered.

This section starts with an acknowledgement of the extraordinary challenge of balancing a range of trade-offs across a number of design- and parametric options. The framework put forward aims to achieve this balance appropriately.

6. OPERATIONS

This section recommends an approach to oversight and management of the proposed arrangement, covering operational delivery and governance.

6.1. Infrastructure

What is this scheme required to deliver operationally? It must:

- Facilitate the receipt of member contributions, a process that is likely to be significantly more complex than under the NSSF because these contributions are expected to be paid in smaller amounts and using a variety of means suiting the interests of members;
- Maintain sound and accurate records of the membership and contribution history of members, split into the component accounts, their beneficiaries and their eligibility at any time to benefits;
- Transfer retirement benefits to eligible members or, on the death of these members, to eligible surviving spouses;
- Pay death- and disability benefits to members, assessing eligibility for these benefits, managing transfers to beneficiaries or to the estates of deceased members;
- Make available to members the amounts that these members wish to withdraw, up to the limits available to them, utilising payment mechanisms suitable to these members (refer to **Box 5**);
- Communicate proactively to members the salient details of the contributions paid, account balances and eligibility to benefits on withdrawal, retirement, death or disability; and
- Manage queries and complaints from members within specified quality- and time standards.

Many of these requirements are shared with the corresponding obligations of the NSSF, the key differences being: (1) the flexibility with which the scheme needs to be able to manage the receipt of contributions and payment of benefits to suit the needs of members; and (2) the imperative to communicate clearly and frequently with members regarding the contributions received and the financial value of the benefits to which they are eligible.

Critical to the success of this arrangement are the establishment of a reliable system for tracking of member accounts and effective channels of communication. Members need to register with the scheme providing biometric information and identifying dependents. It is recommended that the tracking of member accounts is executed through their South African identification numbers and, for participating migrants who do not have a South African identification number (limited, it is assumed, in any event to those with regular status in South Africa, and to

employment in South Africa) a passport number along with the country of issue.[299] These are used as scheme member numbers and are used to link any contributions paid to the members.

Box 5: Flexibility of financial interactions with members

Credit and debit cards, debit and stop orders and payroll deductions are among the many payment mechanisms utilised by customers in the last ten or twenty years as cheques were phased out and cash became outdated.

But the list of payment options now available is snowballing. Internet-based payment mechanisms like Paypal, Stripe, Google Wallet and South Africa's PayU are jostling for supremacy with alternative money-transfer mechanisms based on mobile wallets and QR-based payment options, SnapScan, Zapper and Masterpass, for example, and the third-party payment facilitators such as EasyPay that service the money counters in South Africa's major retailers. These retailers typically also offer a range of financial services in partnership with banks, which also provide money-transfer and eWallet services directly (FinMark Trust, 2017).

The scheme must provide to its members the payment options that best meet their needs and suit their lifestyles and uncertainty of cashflow. Insisting on payment by debit order may be the most convenient to the scheme, for example, but is completely unrealistic to members who do not wish to subject themselves to the inflexibility of the system. Permitting them, on the other hand, to pay in cash at the offices of the South African Social Security Agency or the South African Post Office, administratively intensive and prone to errors, is required in the interest of members but is generally expensive. More efficient than this is the alternative of deposits through the ATM network of the banks.

Mobile-money options are increasingly important to low-income South Africans, must be offered to members of the scheme and must develop to reflect changes in the preferences of these members and the technology available at the time. The principle of enabling a range of payment options is emphasised without making firm recommendations on exactly those methods that should be used, which may be out of date by the time the system is launched.

Reference: FinMark Trust (2017), *Research Report on Mobile Money in South Africa*, September

The tracking/tracing of individual beneficiaries *when benefits are due* raises particular problems, shared with the rest of the social security system in South Africa. This is in particular true in the case of beneficiaries moving to, or residing in other countries.[300] To avoid or minimise the possibility of unclaimed benefits, deliberate steps need to be taken by the scheme administrators, in addition to a system of constant and sound communication with members and beneficiaries. In the event of payments to beneficiaries abroad, this is a matter, which should ideally also be regulated in bilateral agreements.

Communication channels should be flexible to the needs of members but the most promising alternative available at present appears to be a mobile number registered by the member with the scheme and alterable at the request of the member. This facilitates communication outwards to the member. For queries, complaints and other communication in the other direction, a website, toll-free number and a number of automatic mobile-based enquiry numbers should be available. Further alternatives should be made available to suit member needs as technology develops, just as for the payment options (see **Box 5**).

The discussion that follows sets out the alternatives considered for operational infrastructure of the scheme. Issues of governance are considered in Section **6.2**. Governance considerations nevertheless narrow the range of options considered from an operational perspective because they rule out the possibility of establishing this scheme under the auspices of the Pension Funds Act, which is not considered an appropriate legal framework for a social security arrangement.

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[299] The financial- and demographic projections of the scheme do not make explicit allowance for individuals that do not have a South African number. If such individuals are not reflected (or partially reflected) in the corresponding data contributing to the modelling, notably Labour Force Surveys and General Household Surveys but they are permitted to join as members of the scheme, then such an approach is conservative from the perspective of scheme viability. The approach understates the extent of government incentives, however, if the view were to be taken that foreign nationals should also be eligible for such incentives.

[300] It needs to be noted that citizens of Ghana and Rwanda abroad may join the Ghana Informal Sector Fund and the new Rwandan Universal Digital Pension Scheme respectively.

The discussion that follows considers the advantages and disadvantages of five different possibilities,

- The Unemployment Insurance Fund (UIF);
- The NSSF;
- An existing private-sector pension arrangement;
- A completely new entity running the fund on in-house capability; and
- A new entity with extensive outsourcing of services.

Before considering each of the alternatives, preliminary comments are provided regarding the nature of the task facing the administrative operation. It is important, on the one hand, not to underestimate the complexity of the operational task required and, on the other, to recognise the extent of the skills and operations already in the market.

Outsiders to the world of pension-fund administration frequently fail to recognise the complexity of running a defined contribution retirement arrangement. The process of tracking the value of member accounts and of converting the value of pooled assets into the corresponding shares attributable to each member – the process is known as *unitisation* – is not straightforward. Instances of failed operations in this space characterise the retirement industry of the last ten or twenty years. To this should be added a number of features specific to this scheme that further complicate the administrative challenge:

- The formula for risk benefits that looks back on a recent history of contribution payments;
- Small contributions, infrequent or interrupted;
- Partial withdrawals on demand;
- A range of electronic payment- and withdrawal alternatives;
- The possibility of member queries to which administrators may not be accustomed; and
- The capacity to manage portability between schemes and across borders.

For an entity without working experience of the defined contribution environment to attempt to build an operation like this from scratch would be risky. On the other hand, a great deal of experience has been gained in the development and delivery of defined contribution arrangements, some of them providing death- and disability benefits and many of them collecting contributions from individuals. In addition to this, the experience of the UIF at gathering small contributions is helpful. The discussion of alternatives starts with the UIF.

6.1.1. The UIF

The UIF is a social security arrangement, falling under the oversight of the Department of Labour (DoL), with a long history of running complex operations, including collecting contributions, investing assets (on an outsourced basis) and paying benefits to its members. Since the contributions due to the UIF amount to 2% of income, it is accustomed to working with relatively small amounts at the collection stage. Its members are largely formally employed, but many of them are likely to be in informal employment for periods of their interaction with the UIF. Contributions are largely received from employers, however, not the UIF members themselves.

Payments to the UIF may be made:[301]

- via stop order,
- by direct bank deposit through three of South Africa's banks, or
- by internet payment to accounts held on behalf of the UIF by four different banks.

The UIF also provides benefits to its members, sometimes in not particularly large amounts, but only through labour centres, not directly into bank accounts.[302] The website of the DoL suggests that documents must also be

[301] Source, the Department of Labour, http://www.labour.gov.za/DOL/legislation/acts/how-tos/unemployment-insurance-fund-uif/how-to-pay-the-uif, accessed on 13 June 2019.
[302] Source: the South African Labour Guide, https://www.labourguide.co.za/uif/907-uif-unemployment-benefits, accessed on 13 June 2019.

processed at labour centres,[303] but it appears that the application forms concerning claims may also be submitted online.[304]

The UIF system must track contributions received and calculate benefits based on this record of contributions and the corresponding income of the worker, suggesting reasonable capacity to track individual accounts. This falls short of the corresponding administrative complexity associated with defined contribution pension funds, which should not be underestimated.

The UIF has established links with labour-support centres, which process the payments due to members. This would facilitate the provision of added services to the member of this scheme, access to the development of skills, for example, which it is recommended forms part of the suite of benefits provided to the members of the scheme.

The UIF also manages a very large asset portfolio, though the management of these assets is outsourced to the Public Investment Corporation. Unitisation of assets, the process under which those assets attributable to members are divided between them to produce the notional values of individual accounts, does not form part of UIF capabilities. Finally, the UIF has a long record of governance, oversight, audit and financial reporting. In summary, the UIF has:

- An established track record of collecting contributions, managing individual records and attributing the contributions received to these accounts;
- Soundly established links to the network of labour offices;
- A somewhat limited framework for paying benefits;
- An established system for managing assets through an outsourcing arrangement, albeit on an aggregate basis; and
- Strong experience in the disciplines of governance, financial management, audit and reporting.

It is not clear whether the use of the UIF as administrator would enhance or dampen the levels of confidence in the system by participants. If access to labour-support services forms part of the benefits available to members, then the issue may be moot. This subject may usefully form part of the recommended engagement with informal-economy workers to gauge their interest in the scheme and in the proposed operational structure.

6.1.2. The NSSF

Though the details of the NSSF are not known with certainty, it must have:

- Considerable premium-collection capacity, albeit primarily structured for interaction with members who are formally employed or self-employed;
- Member record-keeping capacity covering very large numbers;
- The capacity for retaining a full history of the working details of members;[305]
- Significant infrastructure for the investment of assets, internally or through outsourcing arrangements; and
- The means to make the payment of regular income to members, in all likelihood directly into bank accounts.

As a fully-fledged and very large social security arrangement, the NSSF is likely to be structured to meet international minimum requirements concerning the governance of such schemes. Due to its anticipated size, it is also likely to be established as an independent entity rather than seeking to tap into the corresponding operational or governance infrastructure of other state-owned social security entities. A number of members of the NSSF are also likely, particularly over the long-term, to be eligible for participation in the scheme under consideration in this paper (and vice versa), potentially leading to some saving on the costs of record-keeping.

The development of the informal-economy scheme in Ghana follows a pattern similar to that considered here. The informal-economy scheme was put in place as an independently-managed extension of an existing arrangement, the national pension scheme (SSNIT). The SSNIT itself established the fund for informal-economy workers.

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[303] Source: the Department of Labour, http://www.labour.gov.za/DOL/legislation/acts/how-tos/unemployment-insurance-fund-uif/how-to-claim-uif-unemployment-benefits accessed 13 June 2019, but marked as last updated on 18 December 2008.

[304] Maya on Money, https://mayaonmoney.co.za/2017/10/good-news-claiming-uif/, accessed 13 June 2019.

[305] The proposed career-average defined benefit structure for formal-economy workers requires the retention of a complete history of the income of the member throughout the working life of the member.

Subsequently, on the assumption that SSNIT lacked a legal mandate to manage/govern the Informal Sector Fund, the scheme had to be transferred, and was then acquired by the private securities firm National Trust Holding Company (NTHC) in 2012. Lately however, it has been determined that SSNIT is not legally precluded from managing a scheme for informal economy workers. SSNIT is therefore considering the revival of the scheme (by buying this back from the NTHC), or the creation of a new scheme.[306]

The key capacity that the NSSF will not necessarily have, given that, at the time of writing, it is not expected that it is structured as a defined contribution arrangement, is investment unitisation, the process under which assets are allocated across members. This is an involved process that requires considerable experience (see Section **6.1**). Second to this disadvantage is the possibility that the designers of the NSSF do not prioritise the development of innovative channels for the transfer of contributions and benefits, which those working informally may need to a greater extent than their formally-employed counterparts, who often have better access to mainstream infrastructure.

One possibility, considered below, is that the NSSF is not extended to include the scheme considered for informal-economy workers, but that a large part of the operation of an independently-established arrangement is instead outsourced to the NSSF.

6.1.3. Outsourcing to private-sector pension fund

Administration of the scheme under consideration in this study could be outsourced to an entity already operating in the private sector.[307] The challenges of administering defined contribution arrangements have been the domain of a number of arrangements, some of which are operated on an open basis and are geared to collecting contributions from individuals as well as employers. Note that the outsourcing arrangement would in all likelihood not be with a retirement fund itself, but with the entity providing the administration services to one or more suitable funds.

Full-service outsourcing to existing private pensions funds or their administrators is nevertheless not considered a strong possibility, largely on the grounds that these funds are not able to provide outsourced services but also because they are not in a strong position to manage highly fluctuating contributions and work with members outside of formal employment structures.

Perhaps the greatest risks in such a model, however, concern

- the profit motive of the administrators of these funds and of other services providers falling within the same financial group,
- the temptation for such entities to use the information at their disposal to attempt to sell further products or services to these members, and
- the associated damage to the confidence of members or potential members that may result from this possibility.

Those arrangements with the greatest capacity to provide the service sought are also those, generally very large, that have the strongest commercial incentives to provide services to the members of the envisaged scheme. Small, specialised, independent providers of administration services, which might be considered appropriate on grounds of their independence, are less likely to have the capacity to manage the volumes involved.

Still, parts of the administrative requirements of this scheme might be delivered externally. Outsourcing parts of the administration requirements to private-sector entities with experience in running pension funds is possible as long as clear measures are in place to protect personal data as well as legal measures prohibiting the marketing of products to Fund beneficiaries and/or deduction from beneficiaries' income received from the Fund. This is considered further in the discussion in Section **6.1.5**.

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[306] See Section 3.2.4 and the accompanying authority.

[307] The Government Employees Pension Fund (GEPF) has been considered as a candidate for outsourcing but disregarded for a number of reasons. The first, and probably the most important, is that the GEPF operates under a mandate to its members. Taking on the task of contributing to the administration of another arrangement potentially compromises its ability to deliver on this mandate. The second is that the GEPF is a defined benefit arrangement that receives contributions, in bulk, from the state and state-owned entities. For a number of technical reasons, in other words, it most likely does not have the skill set and experience for the requirements of this scheme.

6.1.4. New self-contained entity

A completely new entity may be established to manage the scheme. Operational infrastructure would need to be developed from the ground up under this model but could best be tailored to the specific needs of these members. The channels offered to members for premium collection and benefit payment could include all of the those considered most appropriate to the workers targeted by the scheme. These channels could also be further enhanced over time, and should, in the interests of members, as technology facilitates such improvement.

Such development may produce ultimately the best system but comes with risk and potentially large cost, particularly as a wide range of alternative channels ought to be considered, including the possibility of integration with other government agencies for the convenience of members.

Investment mechanisms and unitisation capabilities would need to be developed as well. These are commonly undertaken in the private sector but less so in public-sector entities. Careful sourcing of the skill set would be required and the risks associated with any tender process recognised. Full-time employment of the appropriate skills is a possibility, but such skills are likely to be scarce. One possibility is to tap into the skills and experience of any state-owned entities that provide access to retirement savings on a defined contribution basis.

Governance is of critical importance but not particularly expensive to establish. Designing a new scheme from scratch would provide a good opportunity to ensure the effectiveness of the infrastructure supporting systems of governance. Refer to the discussion in Section **6.2**.

In summary, this route may provide the best outcome ultimately but it could also run the most significant risks along the way. Significant expenditure is likely to be incurred, well into the tens of millions of rands and possibly in excess of R100m, without any realistic certainty of the quality and reliability of delivery.

6.1.5. New entity with significant outsourcing

An alternative to the self-contained option is a new scheme that utilises a wide range of options for outsourcing. This retains the advantages of (1) putting in place the governance infrastructure best suited to the scheme and (2) identifying the best available providers of each of the services required by the scheme, contribution collection, record-keeping, benefit payment, investment and support functions like actuarial oversight and audit. Perhaps the main problem associated with the approach is that coordinating services across a wide range of providers can be inordinately complex and fraught with risk, even if each of them is the best available in their particular discipline.

In combination with a separately-established entity, the NSSF itself may prove to be the most attractive partner for a number of services, cutting down on the risks of coordination. What the NSSF, in its latest iteration, appears to lack is innovative premium-collection mechanisms and the capability to unitise assets. The latter must be offered under this scheme, however, if it is to accept voluntary additional contributions on a defined contribution basis. The former could be motivated to the designers of the arrangement on the basis that it offers the multiple channels that members of a national-scale operation should be provided.

6.1.6. Sectoral funds

The possibility of establishing separate funds for the members of different working sectors could also be considered. Tunisia provides a good example of such an approach (see Section **3.2.3** and in particular the details contained in Figure 1).

There are a number of reasons why such an approach might be regarded as inappropriate in the South African context, many of them concerning the loss of economies of scale that such an approach would involve. One of the most significant inhibitors of such an arrangement, however, is the problem of the lack of data. Policymakers in South Africa have, as a result of this problem, a deeply deficient understanding of the sectoral nature of informal-economy work. Sector-specific contributory social security arrangements of other types, specific to workers in the informal economy, do not appear to exist, making it more difficult to pursue this approach in the pension space.

A representative study that covers this issue would be helpful in this regard but would take some time to complete.

6.1.7. Recommendation

All things considered, the scale and internal technical capabilities of the NSSF appears to offer the most efficient way to establish this scheme. Whether it should be a fully-integrated part of the NSSF or a separate arrangement that utilises the services provided by the NSSF needs to be further considered. As it appears, however, that a large number of working individuals may be members of both arrangements, a fully-integrated arrangement is regarded as the most effective way to structure the two entities in combination.

The assumptions underpinning the financial modelling described in Section **7** are summarised in **Annexure 10**. Allowance has been made for an annual administration cost per member of R300 in 2020 terms, increasing at the rate of inflation thereafter. This is consistent with the corresponding cost per member derived from the 2018 financial statements of the UIF, adjusted for inflation, and is approximately three-quarters of the corresponding average equivalent in the insurance industry, reflecting an expectation of some scale efficiency in the scheme. **Annexure 12** shows the sensitivity of results to changes in this assumption, providing outputs for the alternatives of R400 and R500 per member per year.

No explicit allowance has been made for the development costs of the infrastructure of the scheme, which is assumed to form part of government's financial contribution to the scheme and its members. Building the administrative capability of the scheme from scratch on a stand-alone basis could be both expensive and risky. Developing the capability as part of the corresponding development of the NSSF would be both fairer to all parties and more efficient. With careful planning, with coordination of this development with the corresponding development of the associated infrastructure of the NSSF and with appropriate outsourcing, this development could be undertaken at reasonable cost and with sound management of the associated risk.

It is nevertheless acknowledged that this scheme may be put in place in the absence of the NSSF. A good example of such an approach internationally is the defined-contribution arrangement put in place in Rwanda that encourages periodic contributions by members and is administered on a standalone basis. The development of infrastructure was supported by international expertise in micro-pension systems. Such expertise would be helpful were this scheme to be developed independently of the NSSF.

This should not be ruled out, but it does involve some cost and risk, along the lines mentioned in the discussion of this section. Nevertheless, expertise and experience of arrangements such as this one is considerable, notwithstanding some of the unique aspects of premium collection and risk-benefit formulae that characterise the scheme.

Designers of the operational infrastructure should be prepared to take advice from pension fund experts, being careful to ensure that this advice is provided at an arm's-length from the corresponding development of systems and other operational infrastructure. It may be tempting to entertain offers of inexpensive, or even free, development by private-sector providers in return for ongoing management fees or, more dangerously, access to customer information. This must be resisted in favour of tapping into private-sector expertise but retaining scheme independence.

6.2. Governance Principles and Recommendations

The principles underpinning the governance of this scheme are discussed in detail in Section **2.4**. The discussion that follows draws from those principles and recommends a way forward. The recommendations are also mindful of the discussion on the operational framework above, and the requirements flowing from the discussion in this paper on the design of the recommended scheme option. The recommendations also assume a shared governance platform with the NSSF.

Bearing in mind the considerations above as well as relevant international and corporate governance standards and guidelines, the key components of a recommended governance framework should reflect the following core governance components:

- Care should be taken to ensure the independence of the governance framework. As a minimum, this should be guaranteed by supervisory and directory powers granted to an autonomous Board, whose mandate, powers, functions, rights and obligations are derived from the legislation specifically designed for the NSSF context. The composition of the Board should be tripartite in nature, and with representation of informal

economy workers specifically guaranteed, in addition to key experts representing core required professional skills.

- Consideration should be given to an appropriate institutional framework to provide regulatory direction to the Scheme/NSSF on an ongoing basis, as well as a suitable reporting framework applicable to the NSSF Board, embedded in the NSSF-specific legislation referred to above.
  - Regarding the former, in the absence of an existing institution to undertake this task in the public (retirement) environment, it is proposed that an entity, similar to the Financial Sector Conduct Authority, be established for this purpose. This entity should be independent from government, and should have a small, high-level governing structure, the composition of which should be tripartite in nature, but with representation of informal economy workers specifically guaranteed, in addition to key experts representing core required professional skills.
  - Regarding the latter, a threefold reporting framework is recommended, i.e. reporting to the regulatory institution indicated above, to Government, and to the relevant Parliamentary portfolio committees.
- The Board should delegate key functions to properly mandated and staffed sub-committees that have the required mandate to manage key functions on behalf of the Board – in particular in relation to investments, operations, financing, outsourcing, member care and communication, monitoring and evaluation, and human resources.
- To the extent required, the Board should have the power to outsource certain key functions to outside professional service providers where these functions cannot otherwise be adequately provided – for example, managing the assets and investments of the Scheme/NSSF.
- Well-designed policy frameworks should guide and inform the operations of the Board and its sub-committees, as well as outsourced institutions, approved by the regulatory institution indicated above – for example, investment, client service, operational and human resources policies.
- The Board should have the power to (independently) appoint and supervise the Chief Executive Officer and key senior officials of the Scheme/NSSF.
- Operations of and reporting by the Board and its sub-committees, as well as the management of the Scheme/NSSF, should be underpinned by ongoing monitoring and evaluation, provided for in a guiding instrument (e.g., a policy) approved by the regulatory institution.
- Operations of the Board, its sub-committees and the Fund/NSSF itself should be informed by a state-of-the-art underlying information technology platform.
- Given the specific nature and stated objectives of the informal economy-dedicated scheme, attention should in particular be paid to client service, communication, education and training, specifically with a view to ensure that informal economy workers are adequately sensitised and provided with ongoing communication, also in the form of regular member statements.

The details of implementation may depend on a number of factors but must adequately take into account the principles set out herein. While the operational infrastructure of the arrangement may depend on whether it shares resources with the NSSF, the governance does not. The governance of this scheme needs to be marked by independence of oversight regardless of the operational details or cooperation with other entities, in order to protect the interests of members of the scheme and their beneficiaries. Therefore, if the scheme is launched in the absence of the NSSF, or outside the NSSF framework, then it must be independently governed and administered, using a public platform, though it may outsource selected parts of its system development and operations.

7. FINANCIAL MODELLING

Financial viability for the proposed arrangement is established in the analysis described in this section. The discussion that follows includes consideration of:

- **Adequacy**, the implications of the arrangement for participating workers and their dependents;
- **Sustainability**, the financial viability of the scheme in the short-, medium- and long-term; and
- **Efficiency**, the approaches used to establish an acceptable overall cost of operation and investment of assets.

The analysis, to inform financial viability, was done by means of a stochastic model wherein allowance is made for some of the key, future uncertainties of the proposed scheme (e.g. the extent to which those in the informal economy would participate in the scheme). By allowing for variation in some of the model's input items, the model's

output then provides insight into the range over which future outcomes might be observed and which outcomes are more likely than other.[308]

At a high level, the model design is as follows:

- Modelling assumed the scheme to be introduced in 2020 and from there modelled it until 2065. The relatively long duration was chosen to ensure that indicative results could be observed for a generation who participate in the scheme throughout their entire working life (i.e. joining around 2020 and retiring around 2065).
- For the 2020-2065 modelling period, the South African population is projected, as well as the subset expected to participate in the informal economy.
- From the assumed informal-economy population, the model then projects the number of participants in the scheme over the period (under various rates of assumed participation) and for those who choose to participate, how much they contribute to the scheme (under various rates of assumed contribution).
- From this, the model then quantifies the value of risk benefits expected to be incurred every year, so as to inform the portion of contributions that is required to fund a sustainable "risk pool" over time. The balance of contributions is available to be saved for retirement, from which the model can then quantify the extent of accumulated savings that is expected to be available at retirement (under the various assumptions).

In the relevant subsections that follow below, the expected metrics of the scheme is shown for the first five years of operation. Further info is shown in **Annexure 10** (highlighting the key modelling assumptions), **Annexure 11** (setting out the key output metrics for the scheme from 2020 to 2065), **Annexure 12** (showing key sensitivities on the proposed design) and **Annexure 13** (providing the high-level assumptions and key output for the design alternatives).

7.1. Adequacy of Benefits | Retirement

The adequacy of retirement benefits is measured by means of the "replacement factor". This is defined as the pension that a participant can buy with the accumulated savings at retirement from the scheme divided by the earnings of the participant immediately prior to retirement.

It must be borne in mind that an individual member's accumulated savings will depend on a range of factors. These include when the scheme was joined, the contributions made between joining and retirement, the extent of savings withdrawn during the working years. The replacement factor, furthermore, depends on the assumed earnings prior to retirement, a potentially meaningless measure in the case of informal-economy workers, who may not have been earning anything in the period immediately prior to attaining the defined age of retirement.

For the purpose of illustrating a replacement factor, it is assumed that members do not withdraw any of their savings during their working life and that the entire accumulated amount at retirement is used to buy a pension (as opposed to taking part of it as a lump sum). Furthermore, in addition to the assumptions and methodology set out in **Annexure 10**, the replacement factors shown below are for a member who joins the scheme in 2020 and retires in 2065.

Unisex results are shown, as well as separate results for female and male members. The reason for the difference is that males have a shorter life expectancy than females. As such, for a given purchase amount (and all else being equal), a male retiree is expected to be able to convert accumulated savings to a larger pension than his female counterpart (because his pension will be paid for a shorter period, on an expected basis, than hers).[309]

The financial model was run 100 000 times, using the assumptions as set out in **Annexure 10**. The figure below illustrates the distribution of the replacement factor outcomes for a member who retires in 2065, after having

[308] Not all of the inputs items were allowed to vary in this manner, just those inputs that were regarded as crucial to the assessment of the system and therefore risky to assume rigidly. Rates of participation in the scheme, for example, are subject to a high level of uncertainty. In order to accommodate this, it was assumed that these rates would increase over time and with the age of the member but the uncertainty of the rate within these parameters was managed by specifying a statistical distribution within which the participation rate (by age or year) would fall and then running the model many times and considering the corresponding distribution of the results. Refer to **Annexure 10** for further detail on the assumptions utilised.

[309] In some markets, policymakers have taken the view that such a distinction between males and females in the conversion of retirement savings to income is not appropriate and should not be permitted. We have not taken a position on the matter and have instead modelled unisex rates as well as separate male and female rates for the purposes of the financial analysis illustrated in this report.

participated in the scheme throughout the working life. Given how sensitive the results are for the retirement age, the results shown, in the table below are for retirement at both 60 and 65. The graphs thereafter, depict the distribution of observed outcomes for retirement at 60:

Table 1:

Showing rounded percentages		Unisex	Female	Male
Retirement @ 60	Average expected replacement rate	39%	378%	41%
	90% of observed replacement rates	Between 26% and 54%	Between 24% and 51%	Between 27% and 56%
Retirement @ 65	Average expected replacement rate	54%	51%	55%
	90% of observed replacement rates	Between 34% and 75%	Between 32% and 71%	Between 35% and 78%

Figure 5: Distribution of observed replacement rates (unisex)

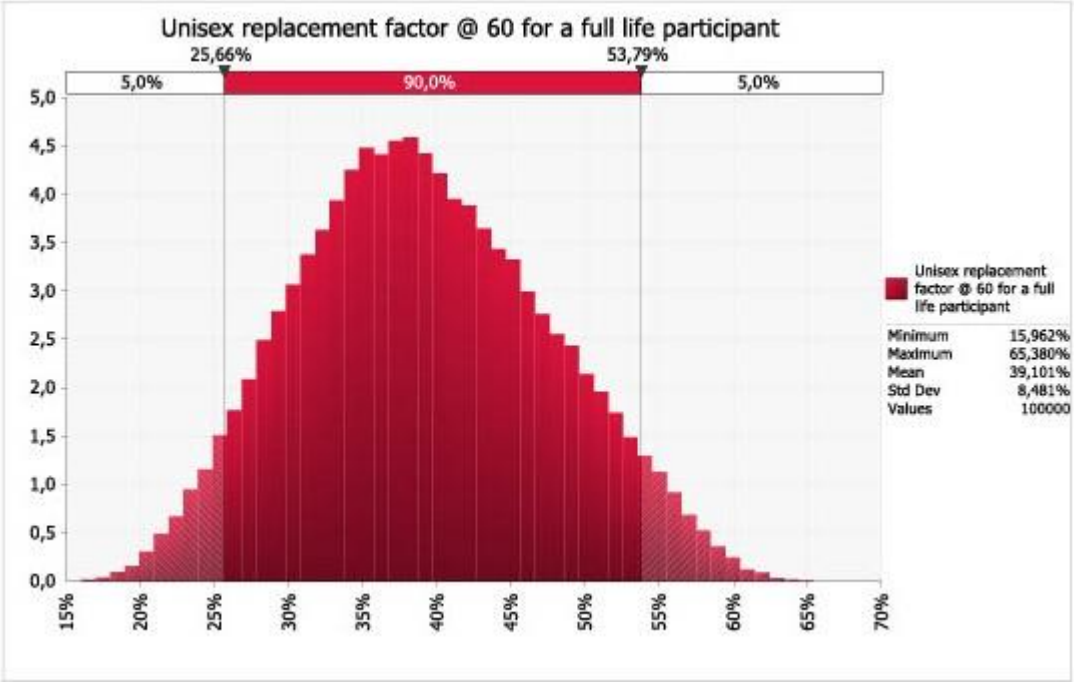


Figure 6: Distribution of observed replacement rates (female)

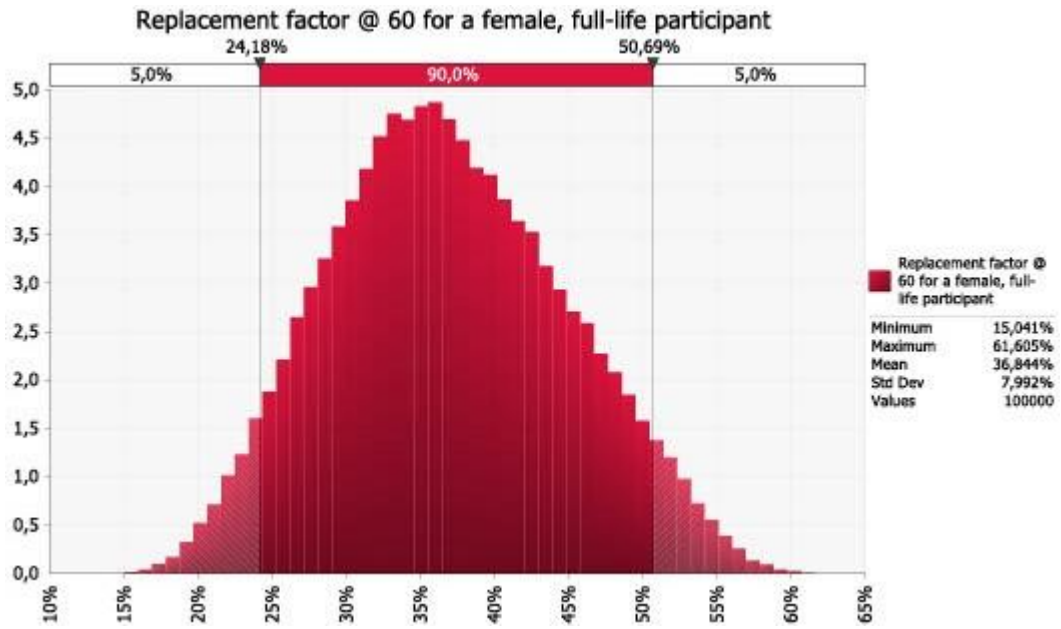
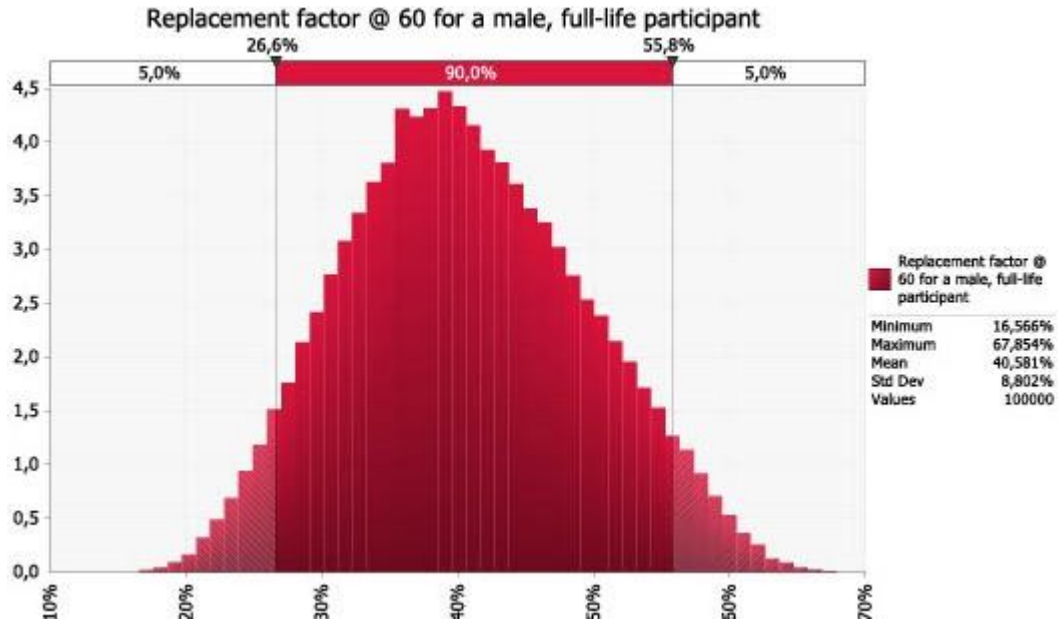


Figure 7: Distribution of observed replacement rates (male)



Discussion of observed replacement rates

Replacement rates can be boosted by the following measures:

1. *Participants*: Join sooner, save more & save consistently over the working life
2. *Government*: Provide a larger subsidy contribution
3. *Design*:
   a) Reduce risk benefits (so that a larger proportion of contributions goes towards savings); and/or
   b) Increase the retirement age to 65 (which boosts replacement rates as shown above).

Comparison with the alternative designs is provided in **Annexure 13**, with a salient summary below:

1. *Simple Defined Contribution*: Yields lower replacement ratios, given the absence of Government subsidies.
2. *Simple Defined Contribution + Risk Benefits*: Yields lower replacement ratios, given the more
3. generous dependents' benefits after retirement.
4. *Career Average Defined Benefit*: Replacement ratios will be higher overall, mainly driven by higher Government subsidies.

5. *Modified Final Salary Defined Benefit*: Yield lower replacement rates due to the openness of the design to "gaming of the system".

7.2. Adequacy of Benefits for a Typical Member | Death before Retirement

In order to illustrate the adequacy of the death benefits, the following assumptions are used:

1. The participant joins the scheme in 2020, earning R2 769 per month (the assumed average in 2020 for all participants of the scheme). Beyond 2020, earnings grow in line with inflation.
2. The participant is assumed to die after having been a member of the scheme for 10 years.
3. The participant consistently contributed 7.5% of earnings every month throughout.

For this member, the benefits are thus as follows:

1. *Funeral benefit*: Own contributions (that is, contributions excluding the Government subsidy) over the 10-year period amounts to R32 848, which is paid as a funeral benefit.
2. *Partner & children pensions*: The contributions (own + Government subsidy) in the last 36 months (prior to death), amounts to R23 859. This implies a partner pension of R1 326 /month (1/18th of R23 859) and a child pension of R663/month (1/36th of R23 859) per child (both payable for 24 months, with the number of children capped at four).

The total value to the family of the deceased, would depend on the family composition, as shown in the table that follows below.

Table 2:

	Monthly pension (paid for 24 months)	Replacement rate (vs earnings before death)	Capitalised value of the monthly pension	Funeral benefit return of own contributions	Total value of the death benefit
			(A)	(B)	(A+B)
Partner only	1 326	28%	30 383	32 848	63 231
Partner + 1 child	1 988	43%	45 575	32 848	78 423
Partner + 2 children	2 651	57%	60 767	32 848	93 614
Partner + 3 children	3 314	71%	75 958	32 848	108 806
Partner + 4 children	3 977	85%	91 150	32 848	123 998

As noted above, the benefits depend on the participant's contributions over the period. For this reason, it is important to consider the impact of contributions at different rates, as shown in the table below (using the same assumptions as above, but each time with different contribution rates):

Table 3:

Total value of the death benefit at different contribution rates					
Sensitivities at different rates of contribution	**Contribution @ 2.5%**	**Contribution @ 5%**	**Contribution @ 7.5%**	**Contribution @ 10%**	**Contribution @ 12.5%**
Partner only	21 077	42 154	63 231	84 308	105 385
Partner + 1 child	26 141	52 282	78 423	104 564	130 705
Partner + 2 children	31 205	62 410	93 614	124 819	156 024
Partner + 3 children	36 269	72 537	108 806	145 075	181 343
Partner + 4 children	41 333	82 665	123 998	165 330	206 663

7.3. Adequacy of Benefits for a Typical Member | Disability before Retirement

In order to illustrate the adequacy of the disability benefit, the following assumptions are used:

1. The participant joins the scheme in 2020, earning R2 769 per month (the assumed average in 2020 for all participants of the scheme). Beyond 2020, earnings grow in line with inflation.
2. The participant is assumed to become disabled after having been a member of the scheme for 10 years.
3. The participant consistently contributed 7.5% of earnings every month throughout.

For the above member, the disability benefit amounts to a replacement rate of 31% (against the earnings immediately prior to disablement) made up as follows:

1. *Disability pension*: A monthly pension of R1 326/month, payable until retirement at age 60 (since the benefit is for "total and permanent" disability, recovery prior to age 60 is assumed not to be possible). The monthly pension amount increases annually at the rate of inflation.
2. *Continued contribution to retirement savings*: From disablement, until retirement, the risk pool will continue to make the participant's contribution towards retirement savings in the scheme, at a contribution rate of 10% of the disability pension amount.

The total value to the disabled participant, would depend on his or her age at the date of disability (since the benefit is payable until retirement) and gender (given the difference between female and male mortality). Hence the illustrative results, as well as the sensitivities are shown separately for the two genders (first for female and thereafter for male), for various ages at date of disablement.

Table 4:

FEMALE					
Illustration @ 7.5% contributions	**Monthly pension amount**	**Monthly contribution to retirement**	**Total monthly benefit accruing to the disabled**	**# of years benefit will be paid**	**Capitalised value of the disability benefit**
Disability @ age 25	1 326	133	1 458	35	383 567
Disability @ age 30	1 326	133	1 458	30	348 313
Disability @ age 35	1 326	133	1 458	25	307 965
Disability @ age 40	1 326	133	1 458	20	261 787
Disability @ age 45	1 326	133	1 458	15	208 937
Disability @ age 50	1 326	133	1 458	10	148 452
Disability @ age 55	1 326	133	1 458	5	79 227

Table 5:

FEMALE	Capitalised value of the disability benefit at different contribution rates				
Sensitivities at other contribution rates	Contributions @ 2.5%	Contributions @5%	Contributions @7.5%	Contributions @10%	Contributions @12.5%
Disability @ age 25	127 856	255 711	383 567	511 423	639 279
Disability @ age 30	116 104	232 209	348 313	464 417	580 521
Disability @ age 35	102 655	205 310	307 965	410 620	513 275
Disability @ age 40	87 262	174 525	261 787	349 050	436 312
Disability @ age 45	69 646	139 292	208 937	278 583	348 229
Disability @ age 50	49 484	98 968	148 452	197 936	247 420
Disability @ age 55	26 409	52 818	79 227	105 636	132 045

Table 6:

MALE					
Illustration @ 7.5% contributions	Monthly pension amount	Monthly contribution to retirement	Total monthly benefit accruing to the disabled	# of years benefit will be paid	Capitalised value of the disability benefit
Disability @ age 25	1 326	133	1 458	35	368 378
Disability @ age 30	1 326	133	1 458	30	336 137
Disability @ age 35	1 326	133	1 458	25	298 726
Disability @ age 40	1 326	133	1 458	20	255 317
Disability @ age 45	1 326	133	1 458	15	204 949
Disability @ age 50	1 326	133	1 458	10	146 504
Disability @ age 55	1 326	133	1 458	5	78 689

Table 7:

MALE	Capitalised value of the disability benefit at different contribution rates				
Sensitivities at other contribution rates	Contributions @ 2.5%	Contributions @5%	Contributions @7.5%	Contributions @10%	Contributions @12.5%
Disability @ age 25	122 793	245 585	368 378	491 170	613 963
Disability @ age 30	112 046	224 091	336 137	448 182	560 228
Disability @ age 35	99 575	199 151	298 726	398 301	497 877
Disability @ age 40	85 106	170 212	255 317	340 423	425 529
Disability @ age 45	68 316	136 632	204 949	273 265	341 581
Disability @ age 50	48 835	97 669	146 504	195 339	244 173
Disability @ age 55	26 230	52 459	78 689	104 918	131 148

7.4. Sustainability and Efficiency | Member Administration

Subject primarily to take-up by participants, (but also to the other modelling assumptions as set out in the annexure), there is no obvious reason why the administration of the scheme should not be sustainable. Furthermore, reasonable take-up should see the scheme benefit from scale efficiencies from early on. The table below provides insight into the expected scale of member administration over the first five years of the scheme. For the purposes hereof, member administration includes all administrative functions required for the operation of the scheme, only excluding the cost of asset management. These figures do not include the cost of managing the asset build-up, which are modelled as a deduction from the investment return achieved.

Table 8:

	2020	2021	2022	2023	2024
Number of pre-retirement member records	92 735	192 464	295 703	402 347	512 054
Number of post-retirement member records	-	3 685	9 245	16 639	25 793
Total number of member records administered	92 735	196 149	304 948	418 987	537 847
Cost to administer a single member record (R)	**300**	**318**	**337**	**357**	**379**

Sensitivity of results to the assumed annual cost of administration, R300 in the base scenario, are provided in **Annexure 12**, which indicates alternative scenarios based on 2020 annual per-member costs of R400 and R500.

7.5. Sustainability and Efficiency | Savings Assets under Management

Subject primarily to take-up by participants and their rates of contribution (but also to the other modelling assumptions as set out in **Annexure 10**, the scheme's asset management should benefit from scale efficiencies from early on. The table below provides insight into the expected level of assets under management (backing the participants' savings) over the first five years of the scheme.

Table 9:

Amounts in R'm	2020	2021	2022	2023	2024
Total contributions (participants + subsidy)	439	944	1 523	2 182	2 931
Less portion going to the risk pool	-88	-189	-305	-436	-586
Amount available for investment	**351**	**755**	**1 218**	**1 746**	**2 345**
Return of contribution to deaths	-2	-11	-29	-66	-110
Capitalised outflow to those who retire	-	-8	-27	-58	-104
Smoothed investment return	13	55	130	245	406
Accumulated assets under management	**R362m**	**R1 153m**	**R2 445m**	**R4 312m**	**R6 848m**

7.6. Sustainability and Efficiency | Risk Pool Net Asset Value

The financial modelling treats the risk pool as a separate pool of assets, from which all pre-retirement risk benefits are paid. The inflows to this pool comprise the portion of total contributions allocated to risk, plus the return of the subsidy portion of contributions for those participants who die. Outflows are made up of the return of own contributions paid to the family of deceased participants (the funeral benefit), as well as the capitalised values of pensions payable following deaths and disabilities. This is shown below for the first five years of the scheme.

The extent of assets under management in the risk pool is considered sufficient to ensure efficient asset management, even if this pool were to be managed separately from the savings pool for any reason, which we do

not regard as necessary. As modelled, the probability that the risk pool remains solvent throughout the 2020-2065 period is assessed at around 68%. Sustainability of the risk pool is to be ensured by regular actuarial valuation of the scheme, so that the portion of contributions going to risk can be adjusted over time to ensure ongoing financial soundness of the risk pool.

Table 10:

Amounts in R'm	2020	2021	2022	2023	2024
Risk portion of total contributions	88	189	305	436	586
Return of subsidy contributions on death	2	11	29	66	110
Total inflow	**90**	**200**	**334**	**502**	**697**
Death: Return of own contribution	-2	-11	-29	-66	-110
Death: Capitalised value of pension benefits	-10	-64	-165	-278	-375
Disability: Capitalised value of pension benefits	-6	-36	-94	-158	-211
Smoothed investment return	3	9	15	17	19
Net Asset Value	**R74m**	**R171m**	**R231m**	**R249m**	**R268m**

7.7. Sustainability and Efficiency | Total cost to Government

To a large extent, the overall viability of the scheme depends on its affordability to Government. Government's contribution to the scheme is made up of the contribution subsidy as well as the cost of the scheme's administration.[310] The table below sets this out for the first five years of the scheme (shown at 5-yearly intervals until 2065 in **Annexure 11**).

Table 11:

Amounts in R'm	2020	2021	2022	2023	2024
Contribution subsidy	220	472	761	1 091	1 466
Scheme administration	28	62	103	150	204
Total cost to Government	**R247m**	**R534m**	**R864m**	**R1 241m**	**R1 669m**
Contribution subsidy as % of total cost	89%	88%	88%	88%	88%
Scheme administration as % of total cost	11%	12%	12%	12%	12%

These figures are based on the base-case annual member-administration cost of R300. **Annexure 12** & **Annexure 12** shows the sensitivity of these numbers to the respective alternative assumptions of R400 and R500.

8. CONCLUSIONS

The thoughts set out in this paper are of critical importance. They are important to the millions of informal-economy workers who have little realistic means at present of preparing for their old age. But they are important to the country as a whole. Years of thought has been applied to the challenges of providing coherently for South Africa's workers but the specific needs of those marginalised in the informal economy have not been adequately considered. This paper aims to redress that imbalance.

Key to the findings of this work is the realisation that the information available on this substantial group of workers is inadequate. We do not know with certainty how many workers operate in the informal economy, let alone where

[310] No allowance has been made for the possibility of government incentives to members of the scheme who are foreign nationals.

they are, how much they earn and how they get by. With this is mind, it should not be surprising that do not know very much about their needs and aspirations either.

Consultation with the workers operating in the informal economy regarding the recommendations set out in this paper is critical. This consultation must be thorough, open-minded and systematic. At the same time, mechanisms should be put in place to address the inadequacy of the information available on the workers forming this considerable and invaluable part of South Africa's workforce and economy.

This is a discussion document. Its recommendations need to be thorough evaluated and criticised. The workers whose interests are represented in this paper must not be left behind.

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Annexure 5: Analysis of Labour Force Survey Data

The LFS is regarded as a reliable source of South African data on employment patterns.[311] It is compiled quarterly by StatsSA. Apart from totals and trends, it provides helpful subtotals in a number of respects, covering employment in each of the following categories, for example:

- Formal-economy workers, excluding those in households and in agriculture;
- Informal-economy workers, excluding those in households and in agriculture;
- Workers in households; and
- Workers in agriculture.[312]

For this purpose, the definition of formal and informal are most important, not least because some commentators have criticised StatsSA for not defining informal-economy workers sufficiently widely. The designers of the survey have responded to this by seeking to allocate to the informal category those workers in formally-registered entities that do not enjoy the protection regarded as appropriate under law for formal-economy workers. Care should be taken when interpreting trends as changes of this nature impact the consistency of data. Furthermore, the LFS makes no attempt to allocate household- and agricultural workers into formal and informal categories. Inferences need to be drawn that are unavoidably imperfect.

Figure 8 shows the breakdown of all workers at quarterly intervals over the period of just over ten years from the beginning of 2008 to the first quarter of 2019. Workers are split between the four categories outlined above. The percentage represents the total of non-agricultural workers and other informal-economy workers divided by all non-agricultural employees, a rough proxy for the rate of informality among those who are working.[313]

On LFS measures, the informal economy has remained a relatively stable percentage of non-agricultural total employment over the last ten years, though the increase over the last year or two is noteworthy. The actual number of workers in these economy segments has increased gradually since 2010, reaching, by the beginning of 2019, of the order of 3 million informal workers, 1.3 million workers in private households, and just under 850 000 agricultural workers.

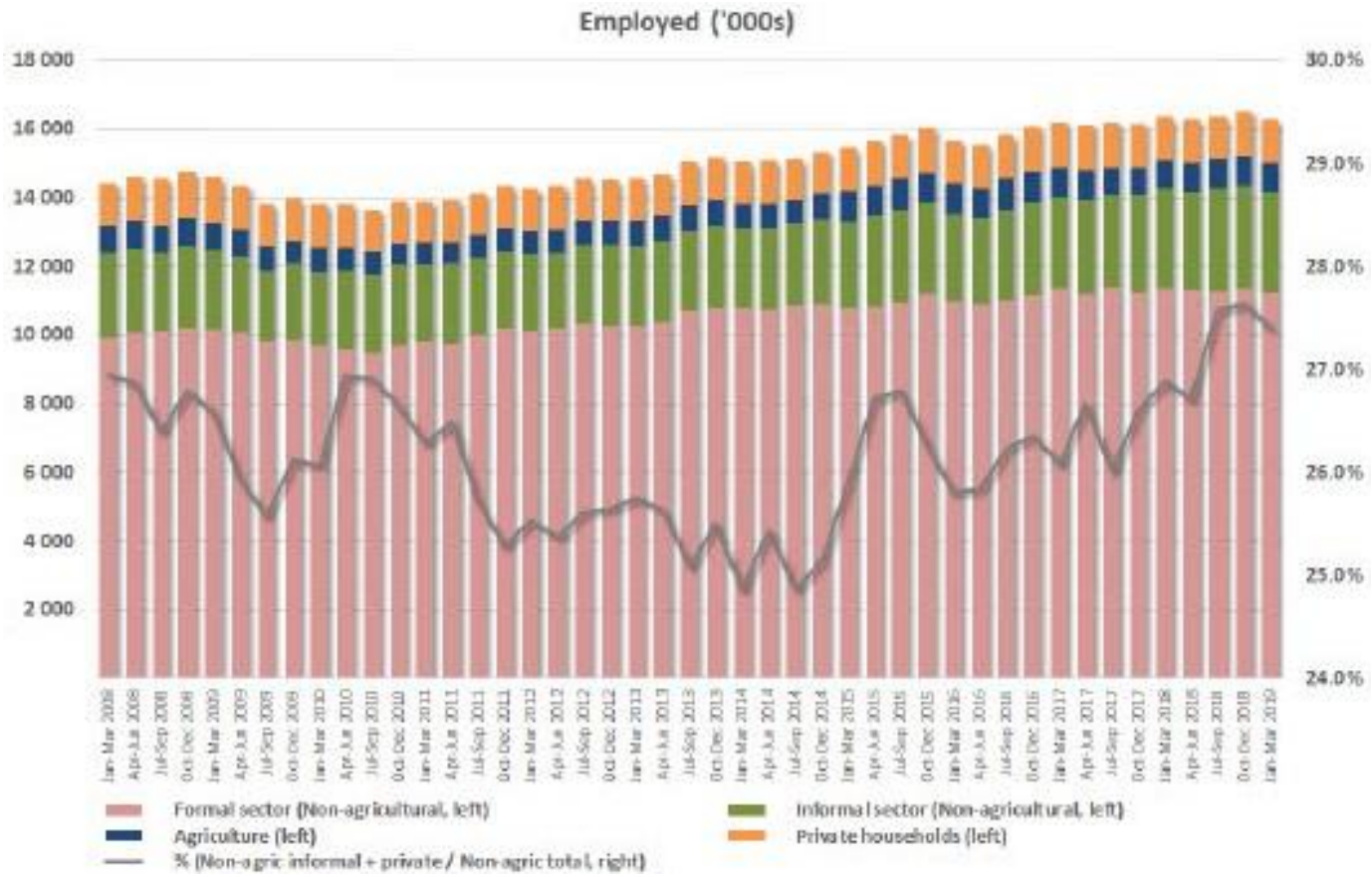
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311 All data referred to in this annexure is available at Statistics South Africa, http://www.statssa.gov.za/.

312 The survey does not split either household or agricultural workers between the formal and informal categories. Note that workers denoted as household employees are not necessarily domestic workers. Some of them are working from home as employees of formal or informal enterprises, repairing motor vehicle, for example.

313 The percentage itself should not be regarded as significant, but the trends are worth noting.

Figure 8: All workers by category, 2008 to 2018



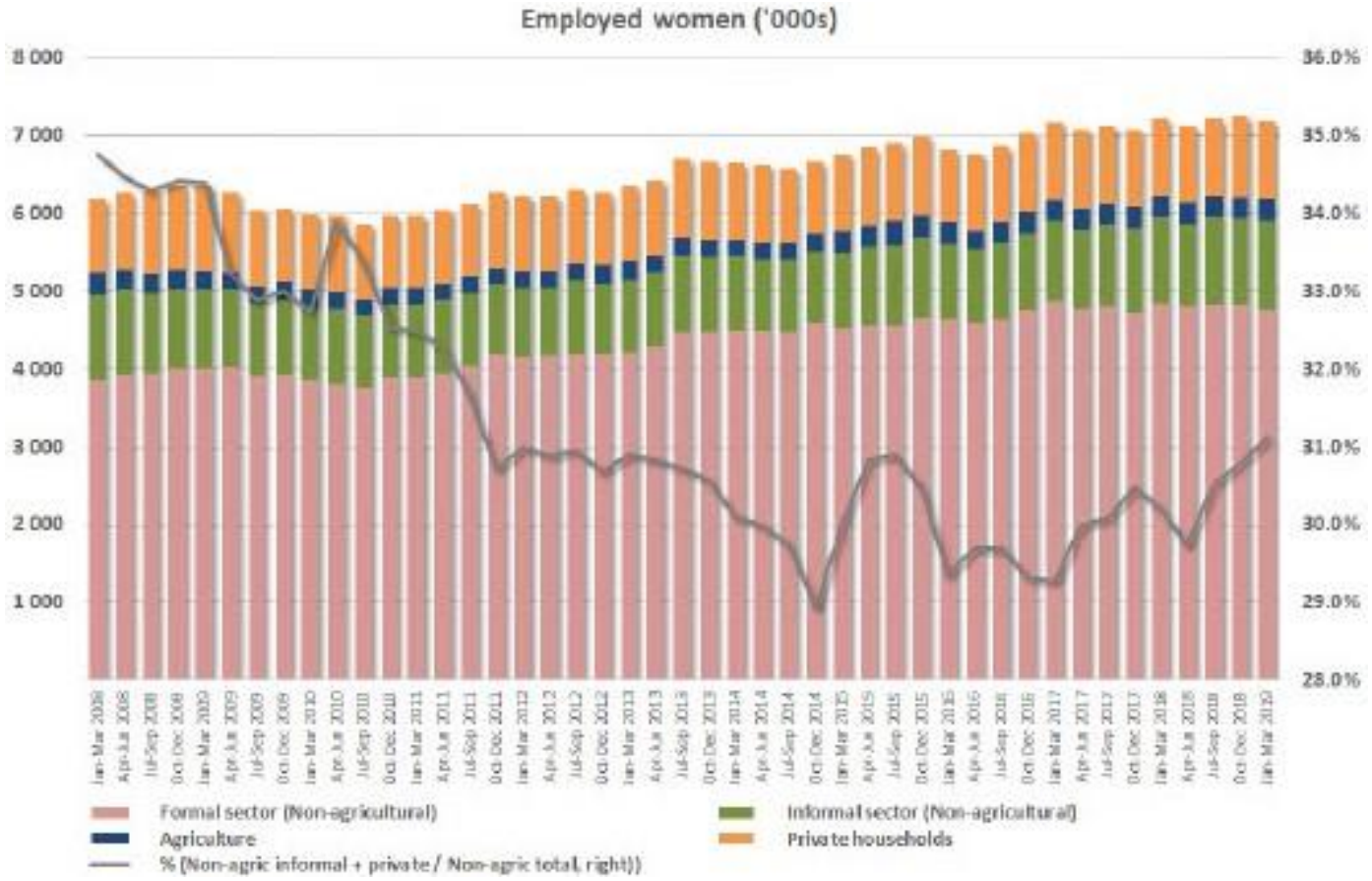
The total of all formal-economy workers has been stable over the last nine quarters at around 11.3 million. The corresponding total not economically active reached a high of 15.8 million, of which just under 3 million, also a record, are discouraged job seekers.

Figure 9 shows the corresponding statistics for women and **Figure 10** for men, again including all workers in private households with the informal-economy workers for the purposes of constructing the proxy for the percentage of all employees working in the informal economy. For women, this percentage fell from 35% in 2008 to 29% at the end of 2014 and then stabilised before rising again more recently. In contrast, for men, the percentage has increased from a floor of below 20% in 2009 to around 25% during 2018.[314]

In absolute numbers, informal-economy female workers, excluding agricultural workers, fell from the level of around 1.1 million in 2008 to below 900 000 in 2012 but rose again to just over 1.1 million at the beginning of 2019. In addition, approximately one million women work in households, a figure that has been reasonably stable over the period.

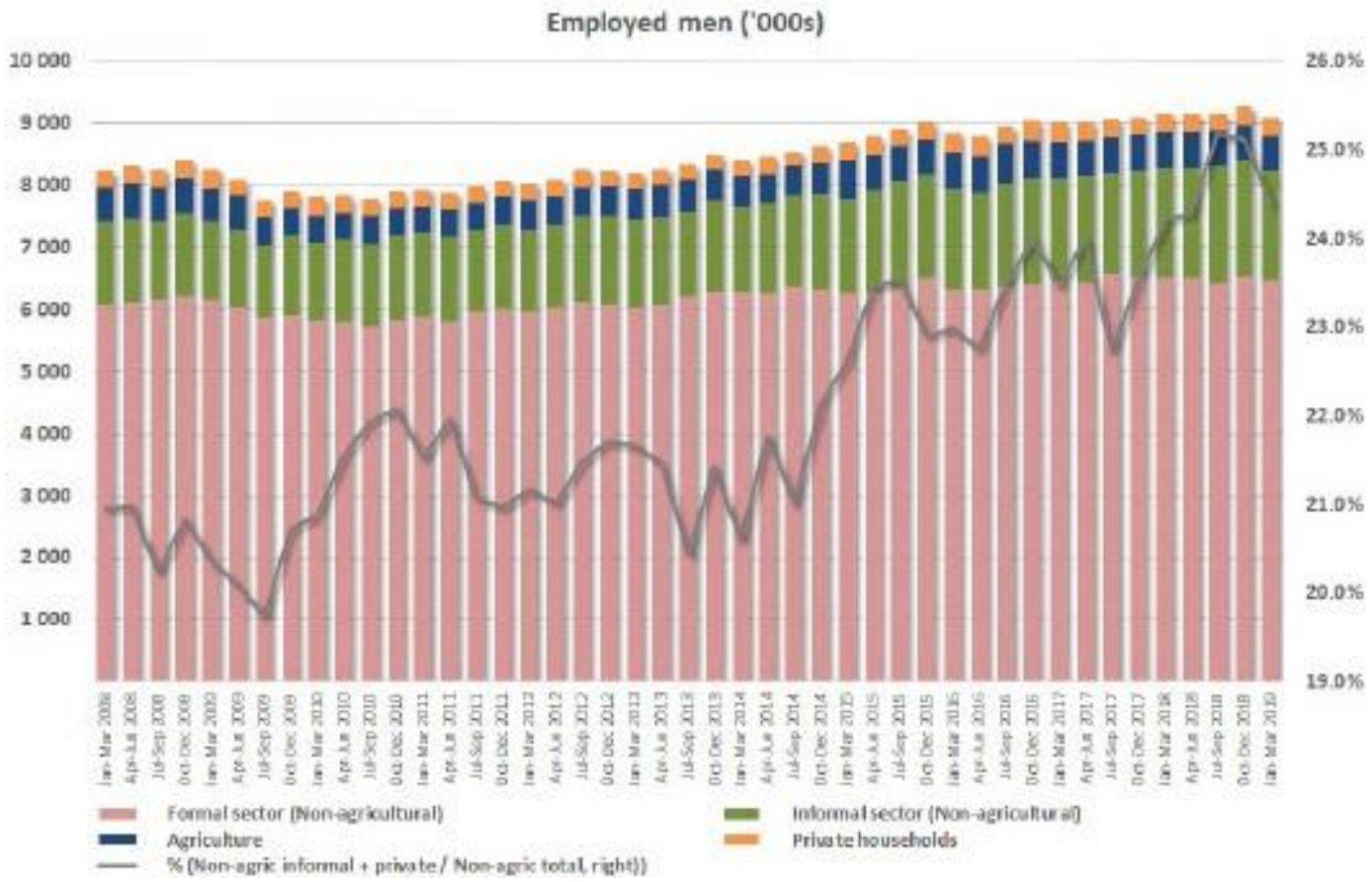
[314] The proportion of working women employed in private households is much higher than for men. Counting these women into the informal economy raises the calculated rate of informal employment to a level (31.3%, Quarter 1 2019), which is above that of men (24.4% at the same time). However, excluding household workers from this ratio brings the corresponding level (16.6%) to below that of men (20.9%).

Figure 9: Breakdown of workforce, 2008-2018, women only



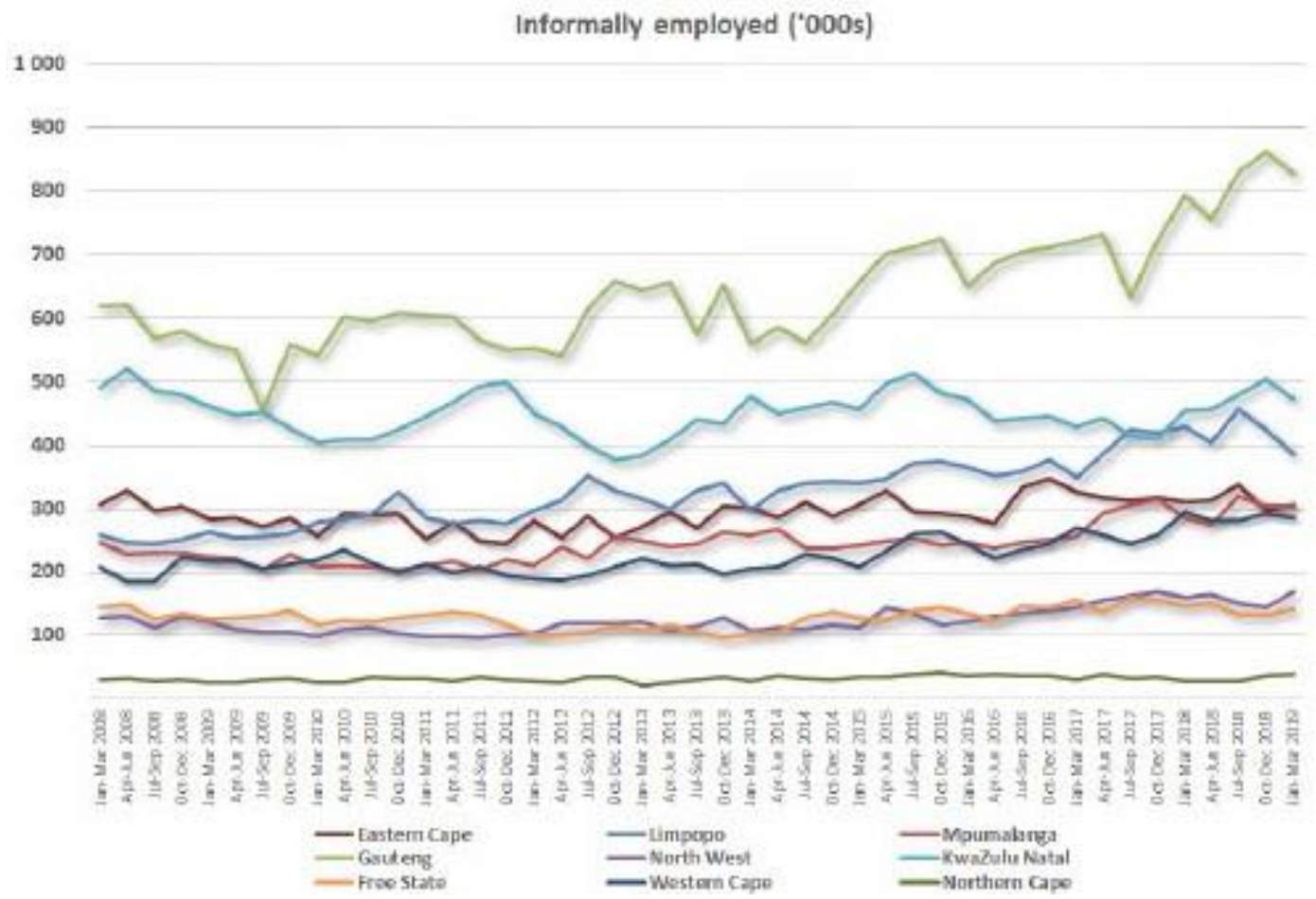
After falling somewhat in 2009 and 2010, the number of men working in the informal economy, outside of agriculture increased, from a low of under 1.2 million to a high of 1.89 million before reducing to current figures of just below 1.8 million.

Figure 10: Breakdown of workforce, 2008-2018, men only



Based on these figures, the proportional increase in informal employment is attributable to this rise in informal-economy workers rather than a reduction in the overall level of the workforce. Methods of detection of informality may have contributed to this increase, but it is largely limited to men. The increase is also evident in the corresponding ratio excluding workers in private households, which do not contribute a large number in the case of men. workers defined as informally employed, in each of South Africa's nine provinces.

Figure 11: Informal-economy workers by province



The numbers of informally employed by province show overall consistency, with one or two noteworthy exceptions. Numbers in informal employment have increased particularly rapidly in Gauteng, but also in Limpopo, the Western Cape, Mpumalanga and the North West province.[315] They have remained broadly stable in KwaZulu-Natal, the Eastern Cape and the Northern Cape.

Gauteng's leadership of informal-economy employees needs to be assessed against its total workforce, much larger than in any other province.[316] **Figure 12** depicts the percentage of all non-agricultural workers defined as working in the informal economy, also by province.

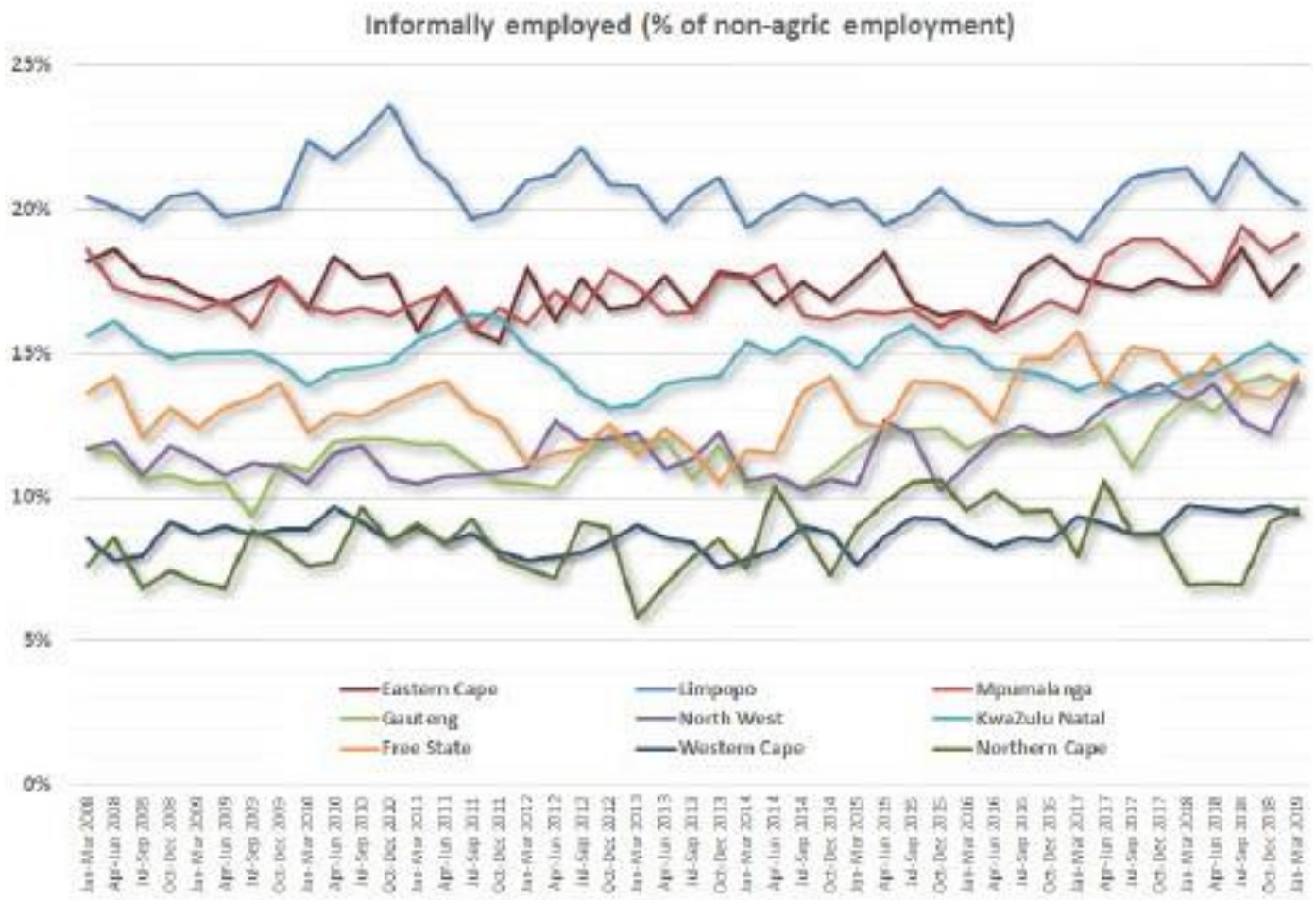
Rates of informal employment are not evenly distributed through the country. They are highest in Limpopo, Mpumalanga and the Eastern Cape and lowest in the Western and Northern Cape. Little evidence of trend increases or decreases over the full period of assessment exists in this data, though rates of informality appear recently to have increased in the Free State and Gauteng.

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[315] Does this represent an increase in informality in the largest cities as part of a migration to urban areas? The LFS survey provides a split of these figures between metropolitan and non-metropolitan areas from 2015, but only for the Eastern and Western Cape, Free State, KwaZulu Natal and Gauteng, not the Northern Cape, Limpopo, North West and Mpumalanga. Simplistically attributing all workers in those four provinces without the urban-rural split into the rural grouping, no evidence of an increase in informal-sector workers in metropolitan areas is evident. Quarter-to-quarter fluctuations are significant, but overall the two groups grow between 2015 and 2019 by roughly the same extent.

[316] The population of Gauteng has also grown faster than the country as a whole, from 8.8 million in 2001 to an estimated 14.7 million in 2018, a compound annual growth rate of 3.06%, against the corresponding national average of 1.50% for the same period (Stats SA, http://www.statssa.gov.za/, accessed 7 June 2019).

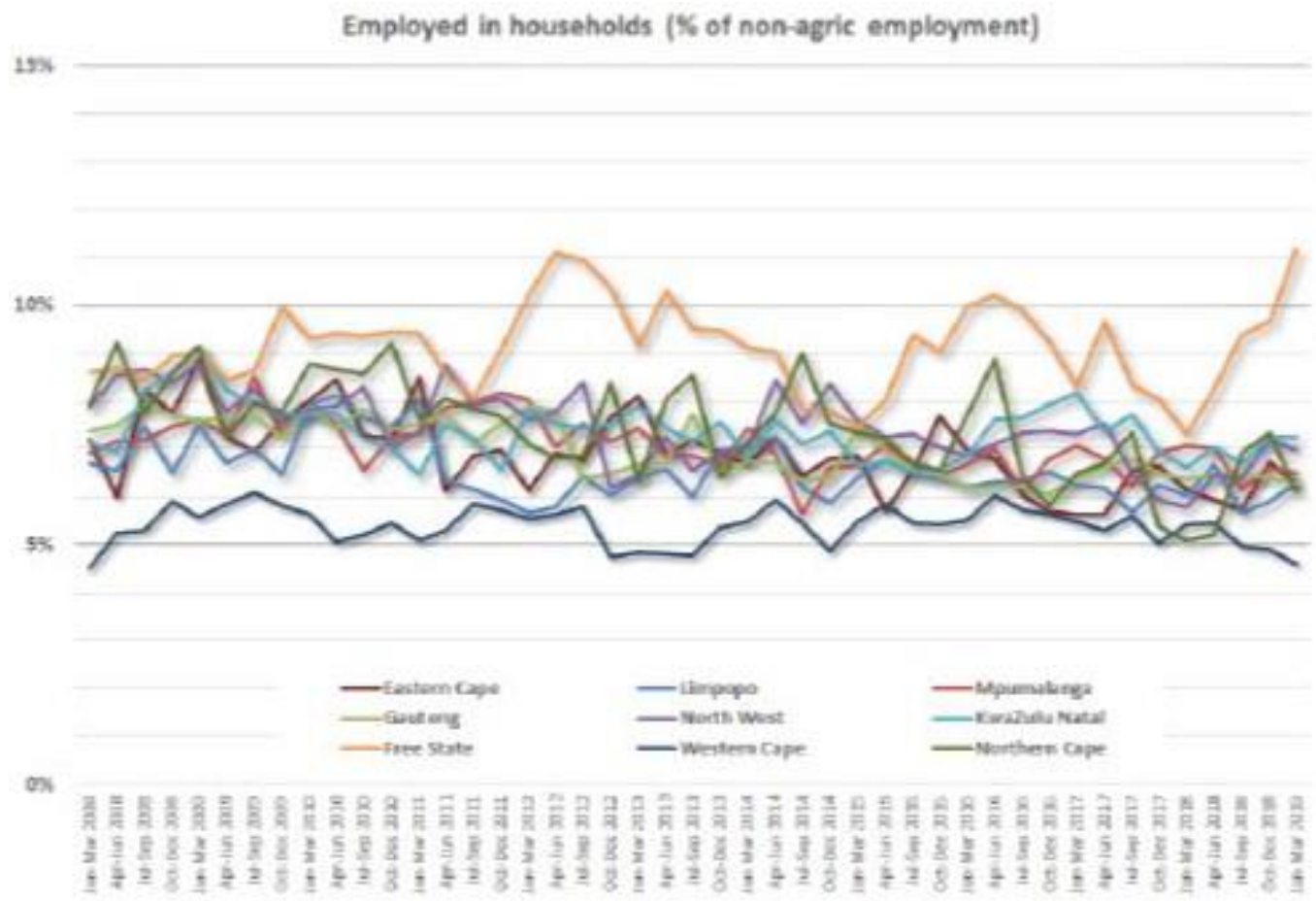
Figure 12: Informal-economy employees relative to all non-agricultural workers, by province



The corresponding proportions of all non-agricultural workers who are employed in households (refer to **Figure 13**) shows little evidence of sustained provincial differences or trends.

Household employment appears to be lowest in the Western Cape and highest in the Free State. Both of these outliers appear to have diverged further from the bunch in the last few quarters. Other provinces show similar levels of household employment and have done so over the last few years, though with a mildly decreasing trend, from between 7.5% and 8.0% in 2008 to below 7.0% for the last 11 quarters from the third quarter of 2016 to the first quarter of 2019.

Figure 13: Household employees, as a proportion of all non-agricultural workers, by province

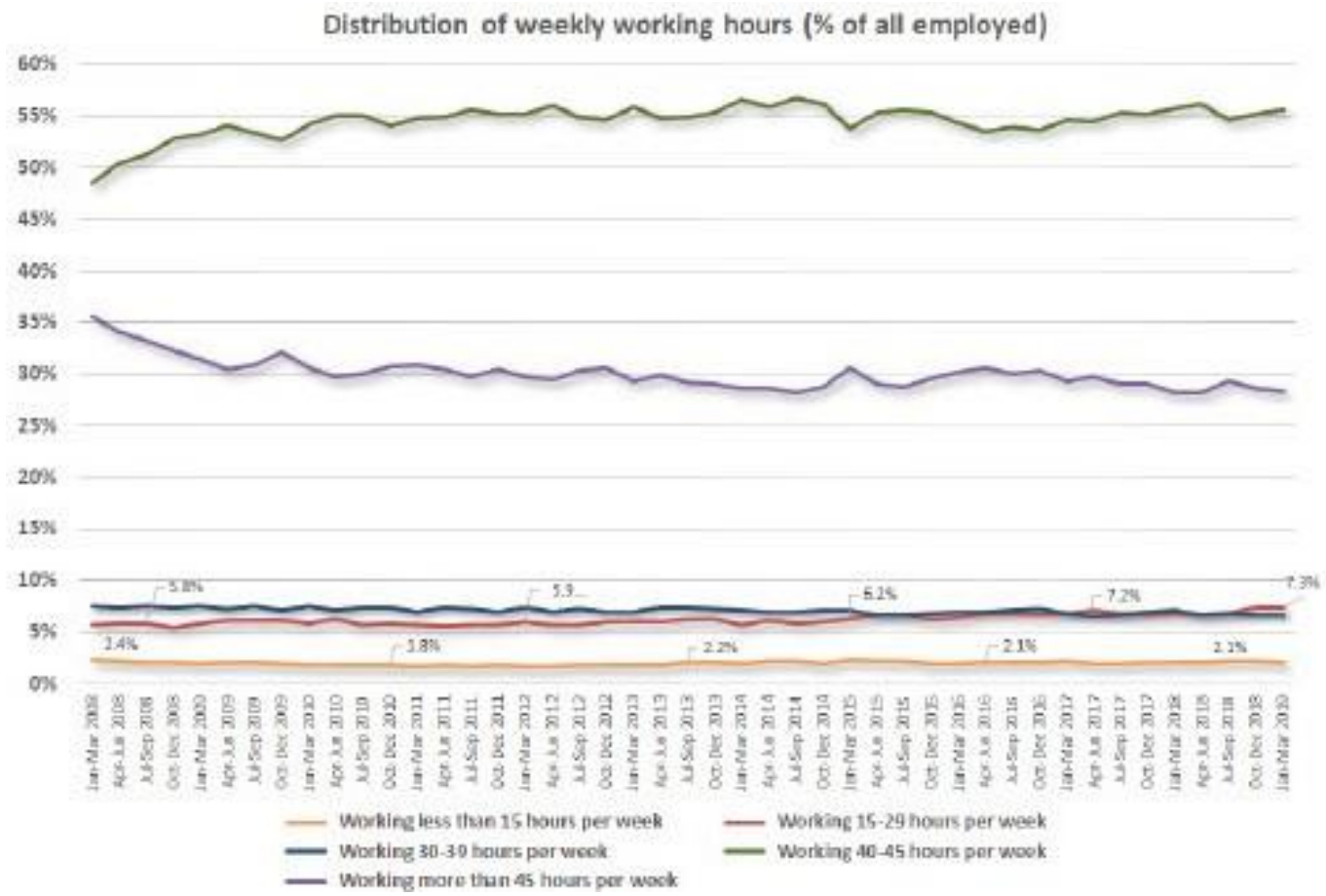


Evidence of creeping informalisation (formal-economy entities employing workers under informal conditions) might be evident from patterns of working hours. **Figure 14** shows the percentage breakdown of all workers into five categories according to the hours worked each week.

It is admittedly not easy to know what to look for in this regard. An increasing proportion of employees working very long average hours per week could suggesting employer abuse or an increasing incidence of multiple jobs, but it might be associated with an increase in the incidence of work associated with good economy times. An increase in the incidence of short weeks might suggest an increase in piecemeal work.

The evidence is inconclusive. Some increase in employees working between 15-29 hours per week is evident, but this appears to be at the cost of those working 30-39 hours. The proportions of employees working less than 15 hours has remained constant. At the top end of the spectrum, more workers appear to be avoiding working weeks longer than 45 hours, but this does not provide a reliable indication of trends regarding informal employment.

Figure 14: All workers by hours worked weekly



Concluding, the following comments summarise this analysis of the statistics available from LFS data:

- **Numbers**. On the definition of the Labour Force Survey, some 2.9 million to 3.0 million adults in South Africa are working informally. In addition, some 1.3 million work in households, not necessarily in the role of domestic servants, and between 800 000 and 900 000 in agriculture, not necessarily informally.
- **Proportions**. The overall percentage working informally has been broadly stable but appears to have shown a slight increase over the last year or so. Including household workers, the corresponding percentage for women is higher but that percentage has been largely falling over the last ten years, while for men the corresponding proportion has been steadily rising. Excluding household workers, a lower percentage of women work informally than men.
- **Other factors**. Provincial differences are evident, and fairly stable over time, with the exception of the recent increase in Gauteng. An analysis of hours worked per week does not show any noteworthy trends.

In summary, when considering eligibility for an informal-economy scheme:

- Counting household workers and all agricultural workers, eligibility is as high as 5 million. But most household workers should be considered formally employed and a number of agricultural workers fall into the formal economy.
- On the other hand, large numbers using survival methods are obviously informal-economy workers and are not counted into the survey, and large numbers of formal-economy employees are likely to be working informally as well.

Annexure 6: Analysis of General Household Survey Data

The General Household Survey (GHS) is a detailed study of the living conditions in households carried out annually, less frequently than the LFS. It provides more detailed insights across these living conditions, particularly income and how it is spent. It should not be regarded as perfect in the way it scales up from the sample to the population, and the manner in which it determines the income of sampled households, but it provides much richer insights than other statistical sources.

The discussion that follows provides an analysis of some of the statistics derived from the 2017 GHS followed by a summary of insights.

Analysis

The images that follow are drawn from arithmetic analysis of GHS figures from the 2017 survey, using the allocations to formality and informality utilised in the survey. Note that the GHS does not define the terms that it uses for its purposes.

Table 12: GHS 2017: worker totals and, for informal-economy workers, average earnings

	Formal-economy workers		Informal-economy workers	
Gender	Count	Avg monthly earnings (R)	Count	Avg monthly earnings (R)
Female	5 743 438	7 504	1 451 569	1 884
Male	7 740 651	8 461	1 809 345	2 691
Total	13 484 090	8 053	3 260 914	2 332

Table 12 shows the total numbers of formal and informal-economy workers, according to the 2017 iteration of the survey. It also shows, for those workers operating in the informal economy, average monthly earnings. Against the LFS (Quarter 2 and 3, 2017),[317] the GHS proposes a higher formal economy (13.5m v 11.3m) and a higher informal economy (3.3m v 2.7m). As the LFS separately identifies those working in agriculture and households, bringing the total employed to 16.1m, the GHS total of 16.7m is reasonably close to its LFS counterpart.

265 figures used from the LFS are averaged over the middle two quarters of 2017 to give a reasonable fit to the corresponding mid-year GHS data.

The differences between these figures may be reconciled by assuming simplistically that:

- All household and agricultural workers are formally employed excepting 500 000, making up the informal economy difference, and that
- Some 600 000 workers that are not counted in the LFS, because they are not considered to be working long enough for work, identify themselves in the GHS as working.

Full reconciliation is unlikely to be as straightforward as this, and both of the surveys should be regarded as subject to some estimation error, but this approach provides a way of bridging the gap between the respective figures.

Monthly earnings declared for informal-economy employees averages R2 300, in 2017 Rands. This is a little higher than suggested by the qualitative research, but may include income from all sources, including grants of all types.[318] The GHS permits a more detailed assessment of the distribution of earnings, which has been utilised for modelling purposes. Appropriate adjustment has been made for the likelihood that grants contribute part of the income.

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[317] Figures used from the LFS are averaged over the middle two quarters of 2017 to give a reasonable fit to the corresponding mid-year GHS data.

[318] Table 13, which depicts GHS assessment of monthly income by age, shows the possibility of an income spike at old age, though this is not consistent for all age bands above eligibility for the social old age grant.

Table 13: Age distribution and average earnings of informal-economy workers

Age range	Count	Avg monthly earnings (R)
15-19	32 082	1 304
20-24	214 286	2 041
25-29	472 391	2 301
30-34	551 689	2 336
35-39	522 459	2 429
40-44	404 728	2 281
45-49	353 035	2791
50-54	287 222	1 804
55-59	237 222	2 529
60-64	100 768	3 064
65-69	48 371	1 679
70-74	15 007	2 592
75+	21 655	1 176
Total	**3 260 914**	**2 322**

Table 13 shows the statistical distribution of informal-economy workers by age group and the corresponding average monthly earnings in each age group. The figures in this Table are broadly within expectation. Individuals are well distributed through the age range, with a peak in the 30s, but significant numbers all the way to old age. Average earnings tend to drop off with increasing age, as physical strength wanes, and as individuals are less likely to receive child grants.[319] The spike in old age is most likely attributable to inclusion of grants income in the total.

Table 14 shows the corresponding numbers and average earnings by province. The GHS provincial totals are consistently above the corresponding totals for mid-2017 in the LFS, but not by the same proportion across all provinces.[320] Provincial income differentials are stark. Though they are understandable based on the differences in the respective wealth levels in each province, other factors (the male-female mix, for example) may contribute.

Table 14: Provincial distribution and average earnings of informal-economy workers

Province	Count	Avg monthly earnings (R)
Eastern Cape	389 628	1 737
Free State	208 153	2 049
Gauteng	897 205	2 825
KwaZulu-Natal	489 660	1 936
Limpopo	430 611	1 975
Mpumalanga	312 852	2 554
North West	225 081	2 283
Northern Cape	52 012	2 084
Western Cape	255 712	2 919
Total	**3 260 914**	**2 332**

[319] This may be confirmed by considering the distribution separately for men and women.

[320] The smallest differences are in the Western Cape, Limpopo and Mpumalanga, less than 7%, and the largest in the Free State, North West and Northern Cape, between 39% and 46%.

Summary

Calibration provided by the GHS numbers suggest reasonable consistency with the LFS and qualitative information, both on the numbers of potential members and the levels and spread of income. Most helpfully, this data confirms the impression gained from the other research that the incomes of those working in the informal economy are typically low, most likely less than R2 000 on average, after adjusting the GHS for grants received, but with a large statistical distribution leaving large numbers with very low income. Provincial differences should not be ignored and require further exploration.

Annexure 7: Informal-Economy Qualitative Research

The discussion that follows summarises the diverse characteristics of those who may be regarded as participating in South Africa's informal economy, as illustrated by the insights gathered by a number of researchers. Clear conclusions regarding the strategies and earnings characteristics of this diverse group are elusive and generalisation should be avoided as much as possible, but findings may nevertheless be grouped under the tentatively expressed set of statements that follows. The studies summarised in this discussion do not present themselves as nationally representative. Applying their conclusions to a countrywide group of workers must be carried out with caution.

Uncertainty regarding the number of workers participating in the informal economy is widespread. Though some researchers are comfortable expressing a clear view (Willis, 2009, for example),[321] others express scepticism regarding the reliability of these numbers (Neves *et al*, undated;[322] Muller, 2003;[323] Essop & Yu, 2008).[324] A number of researchers express a conviction that the number of participants in the informal economy is under-reported (Muller, 2003; Essop & Yu, 2008).[325] While rates of informality may be increasing (Blaauw, 2011),[326] some express the view that this may be at least attributable to improved levels of detection (Valodia, 2007).[327]

Others suggest that any quest to separate workers into formal and informal is inappropriate as employment dynamics are much more complex than might be suggested by such an approach:[328]

> *"in much the same way as the controversial concept of a 'second economy' […] the moniker of the informal sector potentially invokes an overstated dualism. It overlooks the manner in which formal and informal are intertwined, and the manner in which the precarious employment conditions associated with informality are increasingly to be found at the heart of 'formal' enterprises and economies. These are increasingly manifest in practices such as outsourcing, casualisation and contractualisation. Although the concept of the informal sector enjoys much continued usage it is a contested and imprecise concept that potentially obscures as much as it reveals."*

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321 Wills, G (2009), "South Africa's Informal Economy: A Statistical Profile", Urban Policies Research Report No. 7, WIEGO (Women in Informal Employment: Globalizing and Organizing), April

322 Neves, D, M Aliber, J Mogaladi & A du Toit (undated), "Self-employment in South Africa's Informal Sector: Prevalence, Prospects & Policy", Institute for Poverty, Land and Agrarian Studies, University of the Western Cape

323 Muller, C (2003), "Measuring South Africa's Informal Sector: An Analysis of National Household Surveys", Working Paper 03/71, Development Policy Research Unit, University of Natal, January

324 Essop, H & D Yu (2008), "The South African Informal Sector (1997 – 2006)", Stellenbosch Economic Working Papers 03/08, University of Stellenbosch and the Bureau of Economic Research. The figures cited by Willis are striking for their variability, swinging from 3.96m in 2005 to 3.65m in 2007 and not necessarily reflecting absorption by the formal economy (see Blaauw, D, 2011, "The Informal Sector: An African Perspective", Presentation prepared for the 2011 DTI Small Business Summit, 10-12 October, Bloemfontein).

325 Among the arguments put forward for this position are the points that (1) survivalist activities, surely informal in nature, are typically not regarded as work at all, (2) employment that is secondary to the main Source of income is frequently not adequately included in surveys (Muller, 2003, op. cit.), (3) informal-economy workers are more likely to work on a casual, seasonal or temporary basis and more likely to be undercounted as a result of this (Essop & Yu, 2008, op. cit.).

326 Blaauw, D (2011), "The Informal Sector: An African Perspective", Presentation prepared for the 2011 DTI Small Business Summit, 10-12 October, Bloemfontein

327 Valodia, I (2007), "Informal Employment in South Africa", School of Development Studies, University of KwaZulu-Natal, August

328 Neves *et al* (undated) 2

The apparently low levels of informality, in combination with the very high levels of unemployment, are described by Altman (2008)[329] in terms of a paradox. In terms similar to those used by David Neves and his co-authors, Altman appeals for a more nuanced approach to the issue of informality:[330]

> *"'What can be done about the informal sector?' is the wrong question as there is no sector. The purpose of any policy first needs to be identified."*

Rather more uncomfortably, she also asks questions about policy development that distinguishes between those working in the formal and informal economies, emphasising the continuum of survival strategies that lie between what are simplistically described as formal and informal economies. Some writers (Blaauw, 2011, for instance) have criticised the viewpoint that those working in the informal economy are in some sort of waiting room and that they will progress in time to the security of formality, pointing out that the number of workers in the informal economy is growing.

Others (Skinner & Rogan, 2019)[331] have questioned another aspect of this conventional wisdom that, in stressed economic circumstances, the informal economy absorbs workers that lose their formal economy jobs. They present data from after the 2008-09 that shows a relatively stable proportion of all workers occupied in the informal economy.

Regardless of their exact numbers, workers in the informal economy contribute significantly to overall economic output (Blaauw, 2011; Hovsha & Meyer, 2015)[332] and in complex ways to the social interaction and economies of communities (Sustainable Livelihoods Foundation, undated).[333] This leads naturally to the next point.

Workers in the informal economy contribute significantly to economic activity. Derick Blaauw and his colleagues (Blaauw *et al*, 2006)[334] related the anecdote of a group of workers who expressed the conviction that they were laid off their formal jobs and rehired informally so that the employer could avoid the cost associated with formal employment. Significant evidence exists of informally-employed individuals working in formally-registered organisations (Willis, 2009), contributing to the challenges of putting a number to informal-economy workers.

This forms part a complex fabric of linkages between the formal and informal economy (Altman, 2008; Davies & Thurlow, 2009,[335] Neves *et al*, undated). Informal-employed workers cannot be considered as if they are a distinct group, separate from their peers in the formal economy (Valodia, 2007), not least because a number of them participate, over time and even simultaneously in both the formal and informal economies.

Davies & Thurlow (2009) provide an econometric view on the impacts of alternative policy approaches on the informal economy and propose a broad categorisation of informal-economy workers as follows:

- Informal producers who compete with formal producers in product markets;
- Informal traders who sell formal-economy products and charge a fixed transaction-cost margin;
- Workers who are informally employed in producing formal-economy products; and
- Informally-employed workers producing goods and services that are not produced by the formal economy.

While this does not necessarily help in the complex task of identifying and enumerating informal workers, it does help to explain why that task is inherently challenging. Formal and informal economy workers participate in an intricate inter-relationship of organisations and individuals and many of them work, over time and even on a daily basis, in both the formal economy and its informal counterpart, echoing the philosophical concerns expressed by some writers (Altman, 2008, Neves *et al*, undated) and the corresponding challenges of enumeration mentioned by others (Valodia, 2007).

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329 Altman, M (2008), "Formal-informal Economy Linkages", Employment Growth & Development Initiative, Human Sciences Research Council, April

330 Altman (2008) 28

331 Skinner, C & M Rogan (2019), 'The Informal Economy: Is Policy Based on Correct Assumptions?', Econ3x3, accessed at https://www.polity.org.za/article/the-informal-economy-is-policy-based-on-correct-assumptions-2019-02-19 on 13 June 2019

332 Hovsha, J & A Meyer (2015), "The Informal Economy and Sustainable Livelihoods", The Journal of the Helen Suzman Foundation, Vol. 75, April

333 Sustainable Livelihoods Foundation (undated), "Understanding South Africa's Informal Economy"

334 Blaauw, D, H Louw & R Schenck (2006), "The Employment History of Day Labourers in South African and the Income they Earn: A Case Study of Day Labourers in Pretoria", SAJEMS NS, Vol. 9, No. 4

335 Davies, R & J Thurlow (2009), "Formal-informal Economy Linkages and Unemployment in South Africa", Centre for Poverty, Employment & Growth, Human Sciences Research Council, March

A number of reasons have also been suggested for the Altman (2008) "paradox" of the persistently small informal economy, among them barriers to entry in the formal economy that also impact the informal and the competitive power of the formal economy that squeezes out the informal (Valodia, 2007).

Informal-economy workers are widely dispersed but exist in greater numbers in rural areas. Informal work is neither an exclusively urban or rural phenomenon, but the majority of informal economy workers live in rural areas, where they also make up a larger proportion of the total work force (Willis, 2009; Skinner & Rogan, 2019), notwithstanding the tendency of many to seek work in the cities that is frequently informal in nature (Blaauw *et al*, 2006).

A roughly equal number of men and women are in the informal economy, but proportionally informal work contributes more to total employment among women than among men. In metro areas, women in informal employment are more likely than men to be wage earners, but the converse applies in non-metro areas (Willis, 2009).

While informal-economy workers operate in a large spread of occupations, significant groupings exist. Difficulties in identifying and enumerating informal-economy workers suggests that classifying them into occupational groups is also challenging. A number of authors have nevertheless summarised the information available (Essop & Yu, 2008; Blaauw, 2011; Willis, 2009; see **Table 15** and **Table 16**).

Significant differences are observed in occupational mix of men and women. A large percentage of men work in informal-economy positions of manual labour, on farms, for example, on building sites or in motor vehicle repair shops. In contrast, by far the largest proportion of women work in the trade sector, as vendors of food or other items on the street or in informal retail stores.

That informal-economy workers exist in such a variety of occupations has important implications for policy. It suggests, for example, that policy interventions claiming sweeping improvements to the state of the informal economy but focusing on entrepreneurship and small business, actually has a smaller impact on the livelihoods of those that work informally than is acknowledged (Skinner & Rogan, 2019).

Table 15: Most common occupations of men and women working in the informal economy

Male	% of total informal sector employment	Female	% of total informal sector employment
Farm-hands and labourers	14.4%	Street food vendors	30.5%
Bricklayers and stonemasons	10.3%	Street non-food vendors	13.5%
Street food vendors	8.4%	Spaza shop operator	6.0%
Street non-food vendors	5.8%	Tavern and shebeen operators	5.4%
Motor vehicle mechanics and fitters	4.3%	Hairdressers, beauticians and related workers	4.4%
Spaza shop operator	3.9%	Tailors, dressmakers and hatters	3.8%
Car, taxi and van drivers	3.8%	Bricklayers and stonemasons	2.8%
Painters and relate3d workers	3.2%	Healer and sangoma	2.7%
Carpenters and jointers	3.1%	Personal care of children and babies	2.6%
Construction and maintenance labourers	2.2%	Shop salespersons and demonstrators	2.6%

Source: Essop & Yu (2018: 23)

Large numbers of informal-economy employees are working in homes. Though some of these may be unregistered domestic workers, others are carrying out a variety of work from their homes, garages or front yards, some of them working for businesses but based at home.[336]

[336] Willis (2009) states that three-quarters of South Africa's 1.2 million home-based workers are informally employed, that a quarter of these are working from home for businesses and that less than a quarter of home-based workers are women.

Table 16: Largest economic sectors for informal employment

Trade	28.0%
Private household	27.1%
Construction	11.9%
Manufacturing	8.0%
Community & social	7.7%
Agriculture	7.3%
Transport	5.7%
Finance	4.3%

Source: Blaauw (2011); 2008 data

Many of these occupations are inherently tenuous. Essop & Yu (2008) state that some 25% of informal-economy employees work on a casual or season basis and a third in temporary occupations.

The observations of Gabrielle Willis (2009) suggest very poor security of employment. She states that almost three-quarters of informal-economy workers work in non-permanent positions.

A significant proportion of informal-economy workers are self-employed. Though self-employment is also much more common in the informal economy than in its formal counterpart (Essop & Yu, 2008), the self employed nevertheless forms a minority of all of those working informally (Willis, 2009).

Informal work is characterised by low and volatile earnings and considerable uncertainty. Without any doubt the average income of those working in the informal economy is low (Skinner & Rogan, 2019). Essop & Yu (2008) report such averages (in 2000 Rands) as follows:

- informal (employees) R 900
- informal (self-employed) R 1 000
- formal (employees) R 3 500
- formal (self-employed) R 8 000

The differences between the averages of workers in the formal and informal economies are stark. Willis (2009) describes average hourly earnings in the informal economy as lower than the corresponding formal-economy averages by a factor of 3 or 4. Only around half of informal-economy workers assessed in research of Essop & Yu (2008) describe wages as their primary income. Averages are nevertheless misleading.

A study of a group of Pretoria-based informal workers (Blaauw *et al*, 2006) illustrates the uncertainty of income for informal-economy worker. While earnings on average come in at less than the accepted minimum standard for a small household, cash coming in on a good month (averaging R1 187 in 2004 terms) is nearly three times the corresponding average income for a poor month (R402). The working conditions of this group are described as extremely challenging, undermining any notion that informal-economy workers typically choose their occupations to avoid the constraints and rules of formal employment (see also Skinner & Rogan, 2019, who describe the majority of informal economy employees as working long hours and under difficult conditions).[337] Willis (2009) suggests that barriers to entry and mobility may inhibit the potential for informal-economy workers to move into activities with higher earnings potential. Informally-economy workers typically must resort to a range of strategies (Hovsha & Meyer, 2015) to get by.

[337] The majority of the study group in the study by Blaauw and his colleagues (2006) originated outside of Gauteng and some of them outside of the country. They typically work for five or six, but sometimes seven days weekly, around one-quarter of them supplement their income through additional regular jobs and the large majority would prefer formal-economy employment to their current occupation.

Miriam Altman (2008) summarises the available information regarding the range of earnings of different groups of informal-economy workers (see **Table 17**). Though legitimate questions may be asked about why those working in community services, finance, mining and transport are considered (or consider themselves) to be informally-employed, they are in a much better position than their peers in other economic sectors, with more than half of them earning more than R2 500 monthly in 2004. In contrast, over 85% of those working in agriculture and more than 95% of household-based employees earned less than R1 000 in 2004. The construction-, manufacturing- and trade sectors are marked by considerable variation in earnings.

Women working in the informal economy typically earn less than their male counterparts, both overall and reckoned on an hourly basis (Willis, 2009).[338]

Table 17: Earnings distributions of informal-economy workers, 2004

Monthly wages	‹1 000	- 2 500	›2 500
Agriculture	85.2%	4.7%	10.1%
Community	20.4%	10.7%	68.9%
Construction	58.0%	22.2%	19.8%
Finance	30.0%	15.5%	54.5%
Manufacturing	38.0%	23.6%	38.3%
Mining	10.1%	32.6%	57.4%
Households	95.7%	3.4%	0.9%
Transport	28.3%	16.7%	55.1%
Trade	56.0%	17.3%	26.7%

Source: Altman 2008; figures in 2004 rands

In conclusion, workers in the informal economy in South Africa form a large and disparate group, and utilise a variety of survival strategies. Earnings are very low on average but highly variable across occupations and in many instances, over time, and women earn less than men on average. Many of these workers receive income from a variety of sources and a number of them are employed in some way in the formal economy as well or, over time, work for periods in both the formal and informal economies.

[338] Informal work also contributes more to total employment for women than for men (Willis, 2009)

Annexure 8: Criteria for Evaluating Design Alternatives

The tables that follow record the alternatives considered under each of the key elements of design and operational infrastructure of the scheme. Those elements are as follows:

- **Benefits**: categories to be offered, the formula defining the retirement benefit, the form in which the retirement benefit is payable, and benefits payable on death or disability prior to retirement,
- **Membership**: the form of the membership and contribution mandate.
- **Contributions**: the formula and parameters defining the contribution and the regularity of the contribution payment,
- **Incentives**: the forms that incentives may take,
- **Withdrawals**: the rules defining the potential for discretionary access to accumulated saving prior to retirement, and
- **Operational delivery**: the administrative backbone and the mechanisms available for contribution receipt and benefit payment.

In the material that follows, no conclusion on the balance of the advantages and disadvantages is attempted.

Benefits

The table below reflects on the key forms of benefit that might be considered for inclusion under the scheme. The tables that follow this one each consider the respective forms that each of these main benefit types may take.

Table 18: Main categories of benefits (Pros and Cons)

Main categories of benefits	PROS	CONS
Retirement benefits	• Central purpose of scheme • Improves social cohesion	• SOAGs render the benefit unattractive • Benefits broadly equal to contributions • Duplicates an existing benefit • Intangible long-term benefits detract • Incentive costs potentially high
Survivor benefits	• Enhances attractiveness of retirement saving to members • Attractive: benefits > contributions • Relatively easy to confirm eligibility	• Crowding out potential (mild) • Anti-selection possibility • Fraud risks • Administration costs • Income benefits expensive & complex
Disability benefits	• Valuable benefit to informal workers • Could enhance through conditions for benefit payment • Potential to utilize existing claims management experience	• Expensive as risks of disability high • Duplicates an existing benefit • Claims fraud risks • Claims management expensive • Challenges of definition • Credibility of system may be poor
Funeral benefits	• Simple definition Products well understood • Very attractive incentive potential Public-sector partnership possible • Potential for BBBEE development	• Crowding out potential • Potentially intensive administratively Fraud risks
Early (partial) access to saving	• Potential to render retirement saving more attractive • Could be used to clarify purposes	• Compromises retirement objectives • Adds administrative complexity • Adds to financial demands

Table 19: Retirement saving options (Pros and Cons)

Retirement saving options	PROS	CONS
Defined benefit	• Easy to communicate to members • Member appreciation higher • Unfunded promises avoid certain costs • Grandfathering possible	• Challenges of definition • Liability uncertainty • Funding concerns likely • Intangibility potentially detracts • Actuarial solvency v difficult to define • Does not lend itself to early access • Subject to abuse by members outside of the target group
Defined contribution	• System solvency easier to confirm • Beneficial investment potential • Tangibility potentially attractive • Early access easier to define	• Benefit uncertainty • Costs of management of assets • Administration costs potentially v high • Potential for misuse of assets • Public-sector investment potential • BBBEE outsourcing possible
Hybrid design	• Provides the opportunity to take the best of both sets of advantages • Potential to best meet the needs of participants at acceptable cost	• Potentially more difficult for participants to understand • May combine the disadvantages of both options • Potentially costly to the state • Could be abused by members outside of the target group • Potentially more difficult for participants to understand • May combine the disadvantages of both options • Potentially costly to the state • Could be abused by members outside of the target group
Guarantees	• Potentially enhance tangibility and attractiveness of benefits	• Financing challenges • Solvency difficult to confirm
Early (partial) access to saving	• Covered earlier; could be considered a design feature or a form of incentive	

Table 20: Retirement saving options (Pros and Cons)

Retirement saving options	PROS	CONS
Income	• Matches the purpose of the fund • Could be an enhancement to SOAG • Potentially easier to define under a DB structure • Continent spouse pension possible	• Could be small • More expensive to administer • Need to confirm event of death • Potentially difficult to explain conversion of DC accumulation • Unpopular on early death • Longevity risk to the fund • Potentially good conversion rates
Cash lump sum	• Cheaper to administer • More attractive to most members • Distinguishes the fund from SOAG	• Fails to meet purpose of fund • May not serve to address old age • poverty effectively
Fund accessible for controlled drawdown	• Unaffected by early death of recipient • Forms part of death estate • Recipient has some control on income	• Potentially difficult to understand • May be drawn down prematurely
Combination of options	• Potentially the best of all possibilities • May produce strong incentive effects	• Could be v difficult to understand May combine all disadvantages

Table 21: Spouse- and dependent benefits (on death prior to retirement) (Pros and Cons)

Spouse- and dependent benefits (on death prior to retirement)	PROS	CONS
Income	• Matches the purpose of the fund • Best fit to the likely needs of the beneficiary	• Expensive to provide benefits • Expensive to administer
Cash lump sum	• Cheaper to administer • More attractive to most beneficiaries • Akin to a life policy	• Provides only temporary relief • Financially demanding on the fund in the short-term
Waiver of premium	• No immediate financial cost to fund • Extends fund membership and participation • Closest to replacing member role in the fund	• Unlikely to be well understood or • appreciated by beneficiary • Does not provide any immediate relief • May suffer adverse publicity, undermining the perceived value of the fund
Combination of options	• Potentially the best of all possibilities • Likely to improve attractiveness of fund membership	• Likely to be expensive, or provide only small benefits • Administratively intensive • Most significant crowding out effect

Membership and Contribution Arrangements

Table 22: Membership and Contribution Arrangements (Pros and Cons)

Membership and Contribution Arrangements	PROS	CONS
Compulsory membership for all	• Very large membership gained • Communication possibilities increased • No adverse definition of informal employment created	• Difficult to justify if no incentives • Administratively v expensive • Sacrifices creation of special arrangement for informally employed
Compulsory membership for all informal-economy workers	• Cohesion of scheme enhanced • Communication options established	• Administratively expensive • Definitional challenges • Discrimination perceptions • Incentive costs likely
Compulsory membership for specified group	• Provides appropriate pilot options • Could be used by group as part of membership drive • Could provide strong early insights	• May require heavy subsidies • Could involve high administrative expenditure • Will call for additional communication
Voluntary membership	• Strong cohesion or club effect possible • Potential for other financial and non-financial benefits from the club	• Incentive costs possible • May attract the wrong people
Membership linked to affiliation	• Could enhance attractiveness of joining industry or occupational affiliations • Creates economies of scale • Establishes a pilot phase • Stable group facilitates DB approach	• May fragment industry groupings if not seen as attractive • May require incentives • May systematically exclude unaffiliated workers
Compulsory contributions	• Potentially maximises income	• Difficult to define contributions • Difficult to enforce compliance • May still require incentives • Could discourage membership

Membership and Contribution Arrangements	PROS	CONS
Voluntary contributions	• Retains voluntary nature of scheme • May enhance the quality of member activity and interaction • May improve membership numbers, since no obligation to contribute	• May fail to attract active participation • May require significant incentives or early access to funds

Contributions

Table 23: Formula for contribution level (Pros and Cons)

Formula for contribution level	PROS	CONS
Flat minimum contribution	• Meets administrative scale thresholds • Facilitates flat incentive	• Difficult to define equitably • Might have to be set at very low level
Minimum contribution as percentage of earnings	• Stronger rationale for savings plan • More equitably conceived	• Difficult to define earnings • Could be prohibitivelysmall • Members might resist the earnings information that this gives away • Temptation to misrepresent earnings
No minimum contribution	• Enhances attractiveness of scheme • Seen as fairer and could use incentives to motivate higher payment	• Administrative challenges and unit cost • Incentives for al payment levels more difficult to justify
Employer co-contribution	• Enhances the level of savings • Facilitates early withdrawals	• Introduces problems for self-employed • May encourage evasion
Government co-contribution	• Valuable incentive to participate • Strong opportunity to establish fairer system of retirement incentives • Potentially the lowest per-unit administration cost	• Unknown, potentially high cost to state
Contribution expressed as % of earnings w/o min	• Encourages appropriate behaviour	• Not clear how the benefit might be realized in practice

Table 24: Regularity of contribution payment (Pros and Cons)

Regularity of contribution payment	PROS	CONS
Mandatory monthly payment	• Better for member saving plan • Facilitates scheme-level financial planning and budgeting	• Inappropriate where income uncertain • May mitigate against joining scheme
Facility to pay weekly	• Easier for members to manage budgets	• Increases administration costs
Option to pay whenever	• Recognises uncertainty of earnings	• Increases administration costs
Minimum periodical payment	• Puts a value to membership by ensuring activity • Helps to meet administration costs • Could be based on any period	• Unreasonably demanding • Could discourage membership

Table 25: Incentive Arrangements (Pros and Cons)

Incentive Arrangements	PROS	CONS
Offer access to other benefits	• Overall package more attractive • Option to make explicit a portion of the contribution used for benefits	• Costs of other benefits must be met • Compromises retirement offering • Some crowding out • Complicates administration • Further overlaps grant system
Offer other benefits free	• Potentially attractive to members • Options for BBBEE development through outsourcing • Could be structured to encourage	• Crowds out private- and public-sector alternatives • Could dilute social grants benefits • Needs to be funded • Complicates administration • Dilutes potential other incentives like
Government co-contribution	• Potentially attractive to members • Potentially limited to accounting entry • May be seen as equitable • Enhances explicit retirement saving • Could facilitate partial withdrawals • Could be limited (through tax records) to those earning below threshold	• Cost strains government finances • Difficult to motivate • Adds to administrative complexity • If not explicit, could contribute to funding challenges
Access to other state benefits	• Automatic membership of other arrangements potentially attractive • Potentially for administrative stream-lining with e.g. UIF • Access to other Dept of Labour initiatives potentially attractive	• Increases administrative complexity • Cross-financing arrangements need definition
Early (partial) access to saving	• Covered earlier; could be considered a design feature or a form of incentive	
Offer choice of non-cash incentives	• Potentially attractive to members • Could improve member engagement	• Complicates administration • Potentially adds confusion

Table 26: Withdrawals and Vesting (Pros and Cons)

Withdrawals and Vesting	PROS	CONS
No early access	• Retains integrity of retirement saving • Reduces costs of administration • Enhances certainty of asset management and increases returns	• Unattractive to members • Worse than private-sector alternatives • Postpones all access to age potentially not linked to slowdown of work
Proportional access	• Sound rationale • Could be coordinated with employer or state co-payments	• Compromises long-term saving • Complicates administration and member communication • Rationale compromised if coordination with co-payments does not exist
Access for specified purpose	• Helps to meet emergency needs	• Administratively complex • Potentially unfair
Early access limited to own contributions	• Sound rationale	• Administratively complex, particularly in DB case
Automatic vesting after *x years*	• Applies equitably to all sources of contribution	• Add to administrative complexity • Demands member communication • No distinction between own contributions and co-payments

Delivery Mechanism

Table 27: Administrative backbone (Pros and Cons)

Administrative backbone	PROS	CONS
UIF	• Infrastructure already in place, for contributions, benefits & investment • Automatic registration to UIF possible • Potential for incentives via UIF benefits • Facilitates employer contributions • Could enhance UIF compliance rates	• Payment infrastructure not ideal
New pension fund	• Dedicated arrangements within sound • governance • Pension fund supervision • Trustee oversight	• Significant set-up costs • Contribution-collection facilities not necessarily ideal
Existing fund	• Pension fund supervision • Trustee oversight • Administrative infrastructure exists • Investment management in place	• Contribution-collection facilities not necessarily ideal • May be difficult to fit into existing arrangements
Alternative standalone arrangement	• Tailored to meet specified needs • Ongoing administration potentially cheaper	• Needs dedicated administration skills • Set-up costs potentially very high

Table 28: Contribution receipt (Pros and Cons)

Contribution receipt	PROS	CONS
Debit order only	• Administratively efficient • Allows better financial planning • May permit better benefits • Probably lowest set-up costs	• Requires bank account • Requires certainty of income • Unlikely to be attractive to members
Mobile money only	• Convenient for members • Minimum member requirements need to be met	• May require higher set-up expenditure • May practically exclude some members
Cash only	• Convenient for some members	• Calls for a network of receiving points • Administratively intensive and costly
Member choice	• More attractive to members • Incentives could be used to facilitate administratively efficient options	• Administratively challenging and expensive
Choice at industry level	• Administratively efficient • Members of a community more likely to support a stipulated approach	• Could introduce disagreement between members of a group

Table 29: Benefit payment (Pros and Cons)

Benefit payment	PROS	CONS
Cash only	• Could be convenient to members	• Requires extensive customer-facing infrastructure • Introduces personal security risks • Adds to administrative expenditure
Direct into bank account	• Electronic payments most efficient • Improves levels of financial inclusion	• New bank account required for some
Direct into mobile wallet	• Efficient electronic payments	• Infrastructure needs to be established • Minimum requirements of members
Member choice	• Increases member buy-in	• Adds to administrative expenditure

Annexure 9: Analysis of Alternative Benefit Structures

The discussion that follows analyses the qualities of four alternative benefit structures. The evaluation includes qualitative commentary and a rating of the extent to which the scheme meets the potential advantages of that criterion and overcomes the corresponding disadvantages. The content of the annexure concludes with a summary of the analysis. Here, the ratings are tabulated alongside one another to show the relative strengths of the prototypes considered. The annexure closes with a summary of the lessons learned through the process.

Note that quantitative modelling has not been the primary tool utilised to evaluate the pros and cons of each of the alternatives set out in the discussion that follows. The reason for this is that the complexity of the analysis and enormous number of assumptions characterising such modelling undermines the usefulness of such an approach. The trade-offs involved in evaluating a pair of alternatives, let alone a much larger set, are of such a nature that financial modelling tends to confuse issues or inappropriately misrepresent these trade-offs.

Such complexity is exacerbated in the case of the arrangement under consideration here, where the variation in member behaviour prior to retirement is subject to almost infinite variation and where the available metrics describing the possible outcomes are intuitively difficult to grasp. Intuition is challenging because the metrics themselves depend on a number of underlying assumptions and frameworks, not least of which is the stable-income mindset that is typically brought to a discussion of retirement benefits, that clearly does not apply here and that is very difficult to shake off.

A final reason for the limited benefits of modelling as a means to identify the most appropriate approach to designing the benefits of the scheme is that modelling tends to be trumped by ideology. If somebody is convinced that a defined benefit arrangement is preferable to its defined contribution counterpart, then no amount of modelling is likely to persuade him or her otherwise; in fact, a principle-based approach that evaluates the trade-offs involved is likely to be more helpful.

For these reasons, the method of evaluation utilised instead a stepwise approach to the overall attributes of each of the candidates under consideration. The ultimate aim of this process is not to choose the best of these candidates but to allow the process to shed light on those features of the scheme that, thanks to the insights provided through consideration of each of the options, are shown to be desirable for the group concerned. These insights are summarised in the last part of the discussion which follows, referred to as *"lessons learned through the process"*. Modelling was nevertheless carried out on each of these alternatives.

I. Simple Defined Contribution

The first model considered for evaluation is the approach recommended for informal-economy workers in the policy paper that describes the National Social Security Fund (the NSSF), a straightforward defined contribution arrangement:[339]

> *"An administratively simple low-cost arrangement would benefit self-employed or informal sector workers […]. Such a fund would be run on a defined-contribution basis and without Government underwriting. It could also be a default destination for supplementary contributions made through automatic enrolment. Where an employer cannot enrol employees in an occupational fund, they would instead be enrolled in the default fund."*

Design

The key rationale for this design is its simplicity and the fact that it has been conceived as a supplementary arrangement for voluntary participation. In formulation and in the benefits provided, this scheme is not consistent with the corresponding arrangement provided to formal-economy workers, potentially raising concerns of equality against constitutional stipulations.[340]

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[339] IDTT (2012) 28

[340] The arrangement for formal-sector workers in the proposed NSSF is a career average defined benefit scheme, largely as described and assessed in further discussion in this Appendix, where its appropriateness to informal-economy workers is considered.

This design is similar to that of existing counterparts in other countries. A number of international arrangements targeted at workers in the informal economy are also structured as simple defined contribution schemes, without smoothing of benefits and without supporting risk benefits.

The text in the IDTT paper is not explicit on the design of the savings arrangement, and does not mention any supporting insurance. It is interpreted, for the purposes of this analysis, as suggesting an uncomplicated defined contribution arrangement without incentives. A contribution subsidy is indeed proposed for those contributing to the NSSF itself, but part of the justification for that subsidy is to:[341]

> *"[…] encourage formalization of employment, and contribute more broadly to protecting decent terms and conditions of work"*

This suggests that such a subsidy was viewed as a means to attract members to formality of employment and full membership of the NSSF and was not considered for members of the informal economy. However, such an approach may also raise concerns of inequality at constitutional level.

No mention is made in the text of options at retirement, whether accrued savings must all be taken in the form of (regular) income or whether, alternatively, some may be withdrawn as cash at retirement or, for that matter, prior to retirement. Emphasis on the simplicity of the arrangement, and the notion that employees not enrolled in occupational funds could instead be enrolled to this fund, as a default, suggests that a design close to existing defined-contribution private-sector funds is most likely.

We have assumed, for this purpose, along the lines of the current legislative framework applicable to pension funds, that:

- No access to accumulated saving is granted prior to retirement;
- One-quarter of savings accumulated to the date of retirement may be taken as a lump sum; and
- The balance, subject to some practical minimum, must be converted to a lifetime annuity.

A controlled drawdown approach is possible but unlikely to be permitted as accumulated member credits are, in many cases, not expected to be large and funds are likely under the circumstances, to be drawn down to exhaustion relatively quickly.

No insurance arrangements are considered under this model, following our best understanding of the text of the IDTT proposals.

The administrative infrastructure is not discussed by the IDTT but, as the arrangement is envisaged as an extension to the NSSF, it is likely that similar arrangements are to be utilised. It is assumed that an extension to the NSSF is developed or a new defined contribution social security scheme established for this purpose.

Mechanisms for contribution collection and benefit payment are also not considered by the IDTT. It is assumed that similar operational approaches are to be made available for the envisaged defined-contribution fund as for the NSSF. This suggests that (contribution and benefit) payment options suited to workers in the formal economy are likely, with the possibility of alternative, more flexible means developed on top of this to assist members who need this flexibility.

Concerning the payment of benefits, as long as bank accounts are created for beneficiaries at the time of delivery of the benefit, payment into bank accounts is likely to be the most effective and most helpful to members. However, other options, including mobile options, could also be considered.

[341] IDTT (2012) 23

Assessment

Table 30: I Benefits – Main categories of benefits (Commentary and Rating)

Benefits: Main categories of benefits	Commentary	Rating
Retirement benefits	Provides good focus on the retirement benefit, but the lack of incentives may contribute to poor take-up and ultimate inadequacy of benefit.	3
Survivor benefits	The absence of risk benefits may render the arrangement unpopular and subject to challenge on the basis of its inequity against the corresponding scheme available for formal-economy workers.	1
Disability benefits		1
Funeral benefits		1
Early (partial) access to saving	Partial withdrawals are not mentioned by the IDTT, further undermining the likely attractiveness of the arrangement.	1

The simplicity of the defined contribution arrangement is undermined by the absence of supporting benefits, potentially raising concerns of inequality vis-à-vis formal-economy counterparts and claims that policymakers need to do more to address an economic system that stimulates informal-economy employment rather than condemning its participants to second-class citizenship in the scheme that is introduced.

Table 31: I Benefits – Retirement saving options (Commentary and Rating)

Benefits: Retirement saving options	Commentary	Rating
Defined benefit	This is a defined contribution arrangement, so it offers none of the benefit certainty of the defined benefit scheme, but addresses some of the difficulties that a defined benefit arrangement would present in this space.	1
Defined contribution	Solvency of a pure defined contribution arrangement is much easier to confirm, but no protection against investment risk is offered. The assets themselves must be invested, which is not cost-free, but the potential for allocation to assets with long-term social benefit may be realised.	3
Hybrid design	The opportunity to provide an optimal balance of the advantages of both defined benefit and defined contribution has not been taken.	1
Guarantees	Guarantees are not free of cost, but at low level could be provided in a way that benefits members at relatively low fiscal strain. That opportunity has also been missed here.	2
Early (partial) access to saving	Covered earlier, so not repeated as part of the analysis at this point.	

This discussion does not take a view on the advantages of a defined benefit arrangement over its defined contribution counterpart. It rates the combination down somewhat on the basis that none of the advantages of the certainty offered by a defined benefit plan have been built into the benefit structure.

Table 32: I Benefits – Form of retirement benefit (Commentary and Rating)

Benefits: Form of retirement benefit	Commentary	Rating
Income	The benefit is provided in the form of income. The level of income could be rather low, on average, as it depends on voluntary *ad hoc* contributions and would need to be subject to a minimum on the grounds of administrative constraint.	2
Cash lump sum	Paying a portion of the retirement benefit as a cash lump sum potentially enhances the attractiveness of the arrangement to members, though having to wait until retirement dampens that advantage.	3

Benefits: Form of retirement benefit	Commentary	Rating
Fund accessible for controlled drawdown	Drawdown is not mentioned as a possibility by the IDTT but may be a practical solution where amounts accumulated are small.	1
Combination of options	A conventional combination of a lifetime annuity and a cash lump sum is regarded as the simplest to implement and understand, but may not be particularly popular.	2

The possibility of allowing a living annuity drawdown arrangement is considered poor on the basis that it would undermine income security in retirement. On the other hand, where small amounts are accumulated, some practical approach may need to be granted to avoid the payment of income in very small slices. A conventional combination of lump sum and income is regarded as the most appropriate to this scheme.

Table 33: I Benefits – Spouse- and dependent benefits (on death prior to retirement) (Commentary and Rating)

Benefits: Spouse- and dependent benefits (on death prior to retirement)	Commentary	Rating
Income	No benefit payable on death prior to retirement, so none of these arguments need be considered.	1
Cash lump sum		
Waiver of premium		
Combination of options		

This represents perhaps one of the most serious disadvantages of this benefit structure against its alternatives, which provide some form of spouse's protection on death before retirement.

Table 34: I Membership and contribution arrangements (Commentary and Rating)

Membership and contribution arrangements	Commentary	Rating
Compulsory membership for al	The model proposed strongly suggests both membership and contributions on a voluntary basis, simplest from an administrative point of view but least likely to result in large membership, particularly in the absence of incentives of any kind.	2
Compulsory membership for all informal-economy workers		
Compulsory membership for specified group		
Voluntary membership		
Membership linked to affiliation		
Compulsory contributions		
Voluntary contributions		

Simplicity of the strictly voluntary arrangement represents probably its key advantage, but the outcome in terms of contributions made and benefits ultimately received may be poor.

Table 35: I Contributions – Formula for contribution level (Commentary and Rating)

Benefits: Main categories of benefits	Commentary	Rating
Flat minimum contribution	The ethos of voluntary membership extends to the contribution level as well, likely also to be subject to the discretion of members though, for practical purposes, subject to a minimum Rand amount. The flexibility afforded to prospective members may enhance the attractiveness of the offering.	3
Minimum contribution as percentage of earnings		
No minimum contribution		
Employer co-contribution		

Benefits: Main categories of benefits	Commentary	Rating
Government co-contribution		
Contribution expressed as % of earnings w/o min		

No formula is envisaged for contributions, giving members flexibility but potentially limiting the contributions that may be expected under the arrangement.

Table 36: I Contributions – Regularity of contribution payment (Commentary and Rating)

Contributions – Regularity of contribution payment	Commentary	Rating
Mandatory monthly paymen	The completely flexible nature of the contribution regime renders the probability of regular contributions rather low. That flexibility should be regarded as an advantage from the point of view of the member, but a disadvantage from the perspective of the expected volume of saving and assets built up in the fund.	3
Facility to pay weekly		
Option to pay whenever		
Minimum periodical payment		

No mandate is placed on contributions, giving members complete flexibility but potentially reducing the effectiveness of the system in mobilising retirement saving.

Table 37: I Incentive arrangements (Commentary and Rating)

Benefits: Main categories of benefits	Commentary	Rating
Offer access to other benefits	No incentives are provided, best for the fiscus, but least attractive to members.	1
Offer other benefits fre		
Government co-contribution		
Access to other state benefits		
Early (partial) access to saving		
Offer choice of non-cash incentives		

The simplicity of the scheme and the absence of incentives is best for government finances, but on the basis of international and local experience, is least likely to work in terms of attracting members and most likely to be challenged on the basis of inequality compared with formal-economy workers.

Table 38: I Withdrawals and vesting (Commentary and Rating)

Withdrawals and vesting	Commentary	Rating
No early access	No early access to retirement saving is anticipated simplifying the design of the system, but reducing its attractiveness to potential members whose circumstances suggest an acute need for access to savings.	1
Proportional access		
Access for specified purpose		
Early access limited to own contributions		
Automatic vesting after *x* years		

No withdrawal of accumulated saving is anticipated. Early access to saving represents a useful way to differentiate this arrangement from its formal-economy counterpart and make it more attractive to potential members from the

informal economy. (Outside of the scope of this study, participation by members registered to the NSSF could be free of incentives.)

Table 39: I Administrative backbone (Commentary and Rating)

Administrative backbone	Commentary	Rating
UIF	An extension to the NSSF is expected to be reasonably efficient, taking advantage of economies of scale, even if it needs to be established as a separate fund.	3
New pension fund		
Existing fund		
Alternative standalone arrangement		

Reasonable integration with the corresponding arrangements established under the NSSF is likely to be achieved because the fund is envisaged as an extension to the NSSF

Table 40: I Delivery mechanism – Contribution receipt (Commentary and Rating)

Delivery mechanism: Contribution receipt	Commentary	Rating
Debit order only	The details of the infrastructure considered appropriate for contribution collection are not clear. As the scheme is envisaged as voluntary in nature and aimed at informal-economy workers, however, it needs to utilise all available formal mechanisms like debit orders and permit some flexibility for cash and electronic contributions by other means.	2
Mobile money only		
Cash only		
Member choice		
Choice at industry level		

That this is not specifically designed as an arrangement for informal-economy workers and should provoke some concern about the flexibility of its contribution-collection arrangements. Use of mobile money and other convenient mechanisms should form a specific part of the specification of infrastructure.

Table 41: I Delivery mechanism – Benefit payment (Commentary and Rating)

Delivery mechanism: Benefit payment	Commentary	Rating
Cash only	Benefit payment needs to be considered from the perspective of member needs. Payment into bank accounts may be appropriate for the majority of members, bearing in mind the relatively large amounts involved (larger at least than the corresponding size of contributions), as long as new bank accounts are opened for members who do not have such facilities.	2
Direct into bank account		
Direct into mobile wallet		
Member choice		

Typical formal-economy approaches may be sufficient, even for informal-economy workers and their beneficiaries, as long as minimum actions are taken in support of recipients, like opening bank accounts.

A straightforward defined contribution arrangement is indicated by the IDTT as an appropriate arrangement for workers participating in the informal economy who wish to save for retirement. An assessment of the pros and cons of this approach suggests that the absence of incentives to contribute, along with the lack of guarantees and flexible

arrangements, or early access to accumulated saving may render this framework less effective at mobilising savings than the alternatives.

II. Smoothed Defined Contribution with Risk Benefits

The second option is a based on the publication of the Department of Social Development (DSD, 2014),[342] specifically for the scheme aimed at informal-economy members.

Design

This is a defined contribution arrangement with the following modifications:

- Contribution levels are flexible in the hands of the member rather than dependent on some specified or actual earnings, but government matches these contributions.
- Investment returns are smoothed from year to year, so that members themselves do not bear all of the risk of return fluctuations. This, on the one hand, facilitates the potential to allocate assets to investment classes with higher volatility but also greater potential for returns in the long term. On the other hand, the plan depends on holding back a proportion of the investment performance in good years in order to finance shortfalls in years with negative performance. The long-term outcome should be positive for members.
- Three quarters of accumulated savings must be applied to purchasing a lifetime annuity at retirement, on terms that are guaranteed by the government, and the remaining quarter may be taken as a cash lump sum.
- The annuity purchased at retirement is guaranteed for five years, providing protection to dependents in the event of early death, and increases at the rate of price inflation for the duration of payment.
- On death after retirement, an income of 25% of the corresponding full pension amount is applied to support the surviving spouse and children.
- On death prior to retirement but more than three years after joining, a multiple of 1.5 times contributions paid in the previous three years is due to survivors. On the assumption that contributions paid are equivalent to 10 percent of income, this death benefit, is equivalent to 45 percent of annual earnings. A lump-sum funeral benefit equal to R10 000 is paid in addition. On death prior to retirement less than three years after joining, the value of the accumulated retirement account is payable to survivors.
- * On disability before retirement but more than three years after joining the scheme, an annual income equal to 3 times contributions paid in the previous three years is due, payable until age 65 (despite eligibility for social grants at age 60), plus a contribution of 10% of that pension to the member's retirement account. This is generous. Assuming contributions actually paid of 10 percent of earnings, this disability benefit is equivalent to the just under 100% of earnings prior to the disability. If disability occurs less than three years after joining the scheme, only the value of the accumulated retirement account is payable.

It is recommended that the fund is constituted under the Pension Funds Act and the oversight of a board of trustees. It is further recommended that it is administered either by the UIF, the South African Social Security Agency or a private-sector entity. The level of flexibility to members regarding the payment of contributions is not clear in the proposals. As the fund is established explicitly for informal-economy members, however, administration is assumed to be structured around their needs, suggesting high levels of flexibility and access.

Assessment

Table 42: II Benefits – Main categories of benefits (Commentary and Rating)

[342] DSD (2014), "Department of Social Development: Inclusion of informal workers in the reform of retirement provision in South Africa", Consolidated Report, prepared by Oxford Policy Management in partnership with Callund Consulting

Benefits: Main categories of benefits	Commentary	Rating
Retirement benefits	The design is focused on the provision of retirement benefits. Though the absence of a mandate on contributions may undermine the extent of the saving, the government match should enhance the volumes. Protection against volatility enhances the security of the expected retirement benefit.	4
Survivor benefits	Survivor benefits at a reasonable level are provided for. The provision of these benefits in proportion to contributions is a helpful incentive to participate.	4
Disability benefits	A generous disability benefit plus an explicit contribution toretirement benefits is helpful.	4
Funeral benefits	The proposed funeral payment is also meaningful, even if it is available in full only three years after joining the fund.	4
Early (partial) access to saving	No early access to benefits is included in the design of the scheme.	1

The design combines smoothed investment returns and a guaranteed annuity rate with reasonable benefits on death or disability prior to retirement (though only after three years' membership).

Table 43: II Retirement saving options (Commentary and Rating)

Retirement saving options	Commentary	Rating
Defined benefit	This is defined contribution arrangement, but the smoothing of returns and guaranteed annuity rates offer features that bear some resemblance to a defined benefit scheme.	2
Defined contribution	The design provides the flexibility of as-and-when contributions but protects members against some of the volatility of returns.	4
Hybrid design	The design provides elements of both defined benefit and defined contribution arrangements.	4
Guarantees	Limited guarantees are provided, covering the annual growth in the account and the annuity rate, not the absolute level of income due in retirement.	3
Early (partial) access to saving	Covered earlier.	

Leaning towards defined contribution, the design provides a degree of protection against investment and annuity fluctuations while providing an element of hybrid retirement benefits.

Table 44: II Benefits – Form of retirement benefit (Commentary and Rating)

Benefits: Form of retirement benefit	Commentary	Rating
Income	Most of the benefit must be taken in the form of an income, which helps to achieve the core objectives of the system, though benefits may be small in those instances in which a significant level of total contributions has not been paid.	4
Cash lump sum	One-quarter of the accumulated saving is payable in the form of a lump sum at retirement, potentially increasing the attractiveness of the system to participants, though at the cost of undermining the core objective of providing income in retirement.	3
Fund accessible for controlled drawdown	Controlled drawdown is not available under this scheme.	1
Combination of options	A combination is available, though in practice, small accumulated amounts are likely to be payable as a lump sum, perhaps at the option of the member.	2

The approach to the form of benefit is consistent with the corresponding approach applying to members of private-sector retirement funds, striking a balance between enforcing a pension receivable only as an income and permitting some access in the form of a lump sum.

Table 45: II Benefits – Spouse- and dependent benefits (on death prior to retirement (Commentary and Rating)

Benefits: Spouse- and dependent benefits (on death prior to retirement	Commentary	Rating
Income	Benefits on death prior to retirement are available only in the form of an income if death occurs after 3 years of joining and do not include waiver-of-premium benefits (effectively ongoing contributions to retirement savings) in addition.	4
Cash lump sum		
Waiver of premium		
Combination of options		

The risk under this arrangement is that the surviving spouse is not in a good position to save for retirement, but the benefit is nevertheless sound in providing income to the survivor.

Table 46: II Membership and contribution arrangements (Commentary and Rating)

Membership and contribution arrangements	Commentary	Rating
Compulsory membership for all	Membership of the scheme is entirely voluntary, as is the payment of contributions. Although other aspects of the benefit structure are better geared to attracting new members (the smoothed returns, death benefits and contribution subsidy), this particular feature does not promote membership in significant numbers.	2
Compulsory membership for all informal-economy workers		
Compulsory membership for specified group		
Voluntary membership		
Membership linked to affiliation		
Compulsory contributions		
Voluntary contributions		

Except for the incentives indicated elsewhere for this option, no special arrangements are proposed to attract members. It is difficult to predict the combined impact of a mix of factors on the likely membership of the scheme.

Table 47: II Contributions – Formula for contribution level (Commentary and Rating)

Contributions: Formula for contribution level	Commentary	Rating
Flat minimum contribution	Contribution levels are at the discretion of members, though a Rand minimum probably has to be applied to manage administration costs. The incentives provided in the form of the death and disability benefits, which depend on the level of contribution paid, and the matching government co-contribution, may provide material incentives to improving the level of contributions paid. The flexibility to members may also enhance the attractiveness of the arrangement.	3
Minimum contribution as percentage of earnings		
No minimum contribution		
Employer co-contribution		
Government co-contribution		
Contribution expressed as % of earnings w/o min		

No formula appears to be proposed for the level of contributions, in absolute terms or relative to earnings. The flexibility of the arrangement, which may increase attractiveness, needs to be weighed against the disincentive

effects of the absence of mandate, but members are incentivised to contribute by the added contingent death- and disability benefits that they would receive, as well as the matching government co-contribution.

Table 48: II Incentive arrangements (Commentary and Rating)

Incentive arrangements	Commentary	Rating
Mandatory monthly payment	Neither a minimum periodic contribution nor a maximum term between payments is proposed. Notwithstanding the attractiveness of the flexibility, the risk remains that the level of contributions from members is low.	3
Facility to pay weekly		
Option to pay whenever		
Minimum periodical payment		

No constraints appear to be envisaged regarding the frequency of contributions, again enhancing flexibility but potentially at the risk of active participation by members.

Table 49: II Incentive arrangements (Commentary and Rating)

Incentive arrangements	Commentary	Rating
Offer access to other benefits	A matching government co-contribution is proposed generous to members but potentially demanding on the fiscus.	4
Offer other benefits free		
Government co-contribution		
Access to other state benefits		
Early (partial) access to saving		
Offer choice of non-cash incentives		

This is a very attractive benefit to members. The risk regarding such an arrangement is that fiscal costs prove greater than expected, in which case a cap on the subsidy may be required.

Table 50: II Withdrawals and vesting (Commentary and Rating)

Withdrawals and vesting	Commentary	Rating
No early access	No early access to retirement saving is anticipated simplifying the design of the system, but reducing its attractiveness to potential members whose circumstances suggest an acute need for access to savings.	1
Proportional access		
Access for specified purpose		
Early access limited to own contributions		
Automatic vesting after *x* years		

No early withdrawals appear to have been provided for. Though a number of other incentives are provided, the absence of early access represents potentially a deep disincentive on active participation in the arrangement.

Table 51: II Administrative backbone (Commentary and Rating)

Administrative backbone	Commentary	Rating
UIF	A number of alternatives are considered without a firm recommendation being settled on, except that registration of the fund under the Pension Funds Act is regarded as appropriate rather than establishing a social security scheme.	3
New pension fund		
Existing fund		
Alternative standalone arrangement		

Options have been considered but firm conclusions are not drawn. A robust administrative infrastructure is assumed.

Table 52: II Delivery mechanism – Contribution receipt (Commentary and Rating)

Delivery mechanism: Contribution receipt	Commentary	Rating
Debit order only	No comments are passed on the options for contributing to the fund.	2
Mobile money only		
Cash only		
Member choice		
Choice at industry level		

Flexibility of contributions is critical in an arrangement with completely flexible and voluntary contributions.

Table 53: II Delivery mechanism – Benefit payment (Commentary and Rating)

Delivery mechanism: Benefit payment	Commentary	Rating
Cash only	Not considered.	2
Direct into bank account		
Direct into mobile wallet		
Member choice		

Options for paying benefits in a variety of forms are also not considered.

This arrangement combines smoothed defined contribution benefits with generous, contribution-linked death- and disability benefits and subsidised contributions. It appears to provide a good balance of pros and cons. No special efforts are proposed to attract members in large numbers.

III. Career Average Defined Benefit

The third option is based on the model of contributions and benefits applying to the NSSF itself. This is difficult to achieve for informal-economy workers, because it is built around earnings floors and ceilings, which requires reliability of earnings. It is included with the objective of providing consistent terms for formal and informal economy workers through the NSSF. This would be beneficial on the basis that a high proportion of South Africans spend time working in both formal and informal economy occupations, sometimes simultaneously.

Design

The NSSF proposals have the following characteristics, some of which need to be modified (as indicated by the bracketed comments after the descriptions) to facilitate participation by informal economy workers:

- Contributions are payable of 12 percent of income between a stipulated income floor and a ceiling. Of this 2 percent of income is paid to the UIF and the balance of 10 percent to the NSSF. (Requiring informal-economy workers to contribute to the UIF is unrealistic as the rules of the fund are currently structured around formality of employment. For the purposes of this exercise, that contribution is ignored and informal-economy workers are assumed to contribute 10 percent of income to the fund. Even so, it may well be that a contribution of 10 percent is not realistic for many if not most informal economy workers.)

- The floor and ceiling are respectively set at approximately R15 500[343] and the current level of the UIF ceiling, R178 464. Contributions are payable only in respect of earnings falling between this lower and upper limit. (Defining contributions for informal-economy participants in respect of earnings above an income threshold appears unrealistic as they seldom have a stable income over the course of the year. This serious challenge to implementation must be allowed for in the system of incentives.)
- Lower-income members are supported through the mechanism of a government subsidy covering all or part of their contributions. (This is being done or considered in a range of comparative jurisdictions, despite difficulty experienced in practice to verify income of informal-economy members, and the need to avoid gaming by participants. An arrangement of roughly equivalent value is assumed to be provided to these members.)
- Pension benefits take the form of a career average defined benefit. (This is similar in practice to smoothed defined contribution arrangements but is also difficult to apply under the circumstances as incomes must be inferred from contributions and gaming is possible through the payment of higher contributions as retirement approaches – which may need to be controlled via mechanisms such as averaging income over a number of years/contributions.)
- The paper is silent on whether a part of the benefit may be taken as a lump sum, but stresses the calculation of the overall replacement ratio, suggesting that the lump sum is either not anticipated, or that it is expected to reduce the targeted replacement ratio if it is taken. (For the purposes of this analysis, it is assumed that a lump sum is not payable as a substitute for some of the income otherwise claimable.)
- Benefits on death prior to retirement are based on the salary of the worker and the number of dependents at the time of death and are payable for a limited time to surviving spouses and until the age of 18 in the case of child dependents. (This is workable for informal economy workers if the problem, of inferring the salary can be resolved, but the benefit could only be linked to the inferred earnings at the time of the most recent contribution or aggregated over the last number of months or years. Gaming is theoretically possible.)
- Though the discussion document is silent on the matter, a contingent spouse's pension on death after retirement is assumed to be payable.
- Benefits on disability prior to retirement are based on the income of the worker at the time of disability. (This also creates the problem of inferring the salary. Gaming is again possible, though surely not very likely unless the disability claim is itself fraudulent, always a risk.)
- Recipients of disability benefits are eligible for a retirement income when they reach the age of retirement and their dependents to a survivors' benefit on death prior to that age.
- A flat-rate funeral benefit is also payable on death at any time.

No information is provided regarding the administrative arrangements expected to apply to the members of the NSSF. Judging from other parts of the document, a state-run entity akin to the UIF with contributions payable by employers on behalf of their workers appears to be most likely. While it makes sense to have informal-economy members participate in the same scheme, special arrangements would need to be made to accommodate contributions by these members.

It is assumed for the purposes of this analysis that multiple channels are available for contributions, not unlike the UIF, but that this does not extend to mobile-money infrastructure. Benefits are assumed payable into bank accounts that are opened for the member or beneficiary if not in existence at the time of the payment.

Even with the modifications proposed to accommodate informal-economy workers, it remains unclear whether they can realistically be included under an arrangement of this type. As the benefits on the lines of consistency of approach are significant, however, the assessment is carried out below with comments passed, where relevant, on challenges of implementation.

Assessment

Table 54: III Benefits – Main categories of benefits (Commentary and Rating)

[343] This has been adjusted upwards from the R13 000 income cited in IDTT (2012), approximately in proportion to the corresponding change in the UIF ceiling.

Benefits: Main categories of benefits	Commentary	Rating
Retirement benefits	Retirement benefits are well provided for under this arrangement, on a hybrid basis that shares risks. Though salary needs to be inferred from contributions, this is possible under an arrangement like this which is likely to provide benefits similar to those of a smoothed DC system.	4
Survivor benefits	Survivor benefits are payable, but depend on salary at the time of death, which is undefined for informal-economy workers. While gaming by members is possible, the opposite is more likely as earnings typically fall during periods of illness prior to passing away.	2
Disability benefits	Disability benefits are also based on inferred salary at time of death. Apart from the problem of an ill-defined salary, gaming is considered less likely than for the corresponding death benefits, except in instances of fraudulent claims.	3
Funeral benefits	A flat-rate funeral benefit is provided.	5
Early (partial) access to saving	Early access to saving is not considered.	1

The difficulty of inferring the salary from the contributions is not necessarily a hindrance in the case of retirement benefits, but could be problematic where death and disability benefits are concerned and contributions are infrequently paid.

Table 55: III Benefits – Retirement saving options (Commentary and Rating)

Benefits: Retirement saving options	Commentary	Rating
Defined benefit	Theoretically defined with reference to income, these benefits are in practice related to contributions payable, but with significant funding risks resulting from mismatches of benefit and contribution and from the potential of member gaming.	3
Defined contribution	Benefits are related to the corresponding level of contributions paid by members, but without the clarity of the link that a simple defined contribution arrangement provides.	2
Hybrid design	The result is a hybrid design that includes elements of DB and DC, but risks combining the worst features of the respective designs rather than the best. Benefits are indeed defined, but opaquely rather than clearly. Funding risk nevertheless, remains. And, while the investment risk that characterises DC arrangements has been mitigated, it has been replaced by a different type of uncertainty.	2
Guarantees	Guarantees are provided at the cost of high levels of financial risk but, to the potential detriment of members, they are opaquely defined.	2
Early (partial) access to saving	Early access to saving is not anticipated.	1

The retirement benefit combines well the corresponding advantages of defined-benefit and contribution arrangements, and is flexible to informal-economy workers without fixed income who are able to pay only from time to time. However, it lacks the attractiveness of allowing early access to saving, which is important for informal economy workers.

Table 56: III Benefits – Form of retirement benefit (Commentary and Rating)

Benefits: Form of retirement benefit	Commentary	Rating
Income	The clear focus of the benefit structure is on income in retirement.	5
Cash lump sum	It is assumed that a cash lump sum is not available as a substitute to income.	1
Fund accessible for controlled drawdown	Controlled drawdown is not an option under this arrangement.	1
Combination of options	A combination of options does not appear to be available under this scheme.	1

The focus on retirement income is sound, but the absence of alternatives may reduce the attractiveness of the scheme to those who pay contributions on a voluntary basis.

Table 57: III Benefits – Spouse- and dependent benefits (on death prior to retirement) (Commentary and Rating)

Benefits: Spouse- and dependent benefits (on death prior to retirement)	Commentary	Rating
Income	An income benefit is payable to the surviving spouse for a limited period and to each child until age 18, independent of the contribution-paying period. The benefit is not available in any other forms.	3
Cash lump sum		
Waiver of premium		
Combination of options		

The benefit is payable in the form of an income, which is most appropriate to protect the interests of survivors, but for a limited time only. Costs are managed through the provision of limited benefits, the philosophical rationale being that the scheme helps the surviving spouse through a period of adjustment not a working lifetime of lost earnings. This contrasts the generosity of the corresponding death benefits under the smoothed defined contribution arrangement and retains appropriate focus on the retirement benefits.

Table 58: III Membership and contribution arrangements (Commentary and Rating)

Membership and contribution arrangements	Commentary	Rating
Compulsory membership for all	As the scheme is not designed for low-income workers, no comment is passed on whether membership should be entirely voluntary or whether elements of mandatory participation and contributions might be considered. It is assumed to be entirely voluntary.	2
Compulsory membership for all informal-economy workers		
Compulsory membership for specified group		
Voluntary membership		
Membership linked to affiliation		
Compulsory contributions		
Voluntary contributions		

On the basis that membership of and contributions to the scheme are regarded as voluntary, this aspect of the scheme is treated consistently with other alternatives. Contribution flexibility may render the scheme slightly more attractive to those who are inclined to participate in any case, but it could dampen overall participation in comparison with alternatives that provide higher levels of incentives.

Table 59: III Contributions – Formula for contribution level (Commentary and Rating)

Contributions: Formula for contribution level	Commentary	Rating
Flat minimum contribution	Contribution levels are assumed to be at the discretion of the member, even if a contribution percentage is specified, since it is practically difficult to enforce an	3
Minimum contribution as percentage of earnings		
No minimum contribution		

Contributions: Formula for contribution level	Commentary	Rating
Employer co-contribution	alternative. A Rand floor may need to be imposed to manage unit administration costs.	
Government co-contribution		
Contribution expressed as % of earnings w/o min		

Member flexibility potentially limits the contribution levels expected in aggregate under the arrangement.

Table 60: III Contributions – Regularity of contribution payment (Commentary and Rating)

Contributions: Regularity of contribution payment	Commentary	Rating
Mandatory monthly payment	Flexibility in the hands of members may render the scheme more attractive but potentially dampens the total volume of contributions payable.	3
Facility to pay weekly		
Option to pay whenever		
Minimum periodical payment		

The absence of mandate may put downward pressure on the total contributions payable to the arrangement.

Table 61: III Incentive arrangements

Incentive arrangements	Commentary	Rating
Offer access to other benefits	Though the clear intention is to provide financial support to lower-income members working in the formal economy, a parallel approach may be difficult to apply consistently to those working in the informal economy, who seldom enjoy reliable incomes. Some incentive arrangement is assumed to apply to this scheme in the interest of equitable treatment, though how it would work in practice is not clear. Such an incentive would play a very large part in encouraging participation and active contributions.	5
Offer other benefits free		
Government co-contribution		
Access to other state benefits		
Early (partial) access to saving		
Offer choice of non-cash incentives		

Though practical concerns exist regarding the manner in which incentives might be provided, a material subsidy, equivalent in some way to the corresponding financial support considered appropriate for formal economy members, would be a powerful incentive to participate and a strong tool for redistribution.

Table 62: III Withdrawals and vesting (Commentary and Rating)

Withdrawals and vesting	Commentary	Rating
No early access	No early access appears to be anticipated for the NSSF scheme.	1
Proportional access		
Access for specified purpose		
Early access limited to own contributions		
Automatic vesting after *x* years		

The description of the scheme appears to make no provision for early access to benefits.

Table 63: III Administrative backbone (Commentary and Rating)

Administrative backbone	Commentary	Rating
UIF	The delivery of administration is expected to be reasonably efficient, as it builds on the corresponding backbone of the NSSF. How well it caters for the specific needs of informal-economy workers, however, is not clear.	3
New pension fund		
Existing fund		
Alternative standalone arrangement		

Administration is expected to be effective, though it may not automatically meet the specific needs of informal-economy workers.

Table 64: III Delivery mechanism – Contribution receipt (Commentary and Rating)

Delivery mechanism: Contribution receipt	Commentary	Rating
Debit order only	Informal-economy workers have special needs regarding contribution payment as they are much less likely than their formal-economy counterparts to manage a system of regular contributions and typically need a wider range of options to facilitate unscheduled payments.	2
Mobile money only		
Cash only		
Member choice		
Choice at industry level		

Flexibility to meet the specific needs of informal-economy workers may be limited in the absence of special initiatives to cater to these needs.

Table 65: III Delivery mechanism – Benefit payment (Commentary and Rating)

Delivery mechanism: Benefit payment	Commentary	Rating
Cash only	Retirement benefits that are payable in the form of an income, are most likely to be paid into a bank account, opened for the purpose if necessary. This is probably the most appropriate arrangement because it helps recipients to manage these payments. Death and disability benefits paid into bank accounts without option of an alternative, may be less convenient for informal-economy workers.	2
Direct into bank account		
Direct into mobile wallet		
Member choice		

Some effort should be made, in the event that the NSSF were modified for informal-economy workers to ensure flexible mechanisms of delivery to informal-economy members.

The logic that the NSSF should be expanded for the benefit of informal-economy workers is based primarily on the argument that anything other than this would be unfair to these workers and subject to possible challenge. Implementation along the lines proposed by the IDTT would clearly be very difficult, however, premised largely on the construct of a fixed income. It would need to be subject to considerable modification to be rendered appropriate for informal-economy workers who, largely, do not have fixed incomes. If this could be achieved, however, it could also prove beneficial to these workers. Finally, the construct of death benefits payable in the form of income for a limited period to help the surviving spouse through a period of adjustment frees up resources for application to retirement saving.

IV. Modified Final Salary Defined Benefit

The last option in this set of four is not considered in any policy papers but is included here for completeness. This is a final salary defined benefit arrangement that is modified for application to informal-economy workers with variable earnings.

Design

With challenges in the definition of earnings, this is not easy to implement but it must be a final salary scheme if it is to distinguish itself sufficiently from the career average arrangement proposed under the previous option.

Even so, since strictly-defined final salary schemes introduce substantial opportunities for manipulation by members without fixed incomes, benefits need to be established with care. A benefit based on average earnings over a period of years prior to retirement, say three or five, is proposed. The analysis below assumes a five-year period. Since earnings are difficult to define, they need to be inferred from the contributions actually paid by members, assuming an appropriate contribution rate. A maximum income, for this purpose, that bears some reference to, for example, the old age grant, may be appropriate to manage the risk of gaming in the years prior to retirement. It is tempting to base eligibility for benefits on a minimum number of contributions, but as the final-salary formula is based on an accrual of benefits anyway this is not considered necessary. A minimum contribution level may nevertheless be required to avoid the payment of paltry amounts for most of the working life of members and then much larger contributions during the period used to define the benefit.

Benefits in retirement are proposed payable primarily in the form of an income, with a proportion of the notional value at retirement also payable as a lump sum, at the option of the member. This proportion is intended to improve the attractiveness of the scheme, but should be kept relatively low, say 20 percent of the total value of the pension to avoid providing incentives for gaming in the years prior to retirement. A dependent's pension on death after retirement is regarded as appropriate.

Death and disability benefits are available, contingent on the respective events occurring prior to retirement. The benefits themselves are also difficult to define in advance, because they are typically defined in terms of the pre-event earnings of the member on the basis that this best replaces the financial loss experienced (by the member on disability and by their dependents on death). This is challenging under circumstances in which earnings are seldom specified and members are not contractually mandated to pay contributions. On the other hand, fraud and attempted suicide aside, few members choose to submit death or disability claims, so the costs of funding these benefits should be manageable with an appropriate specification of the benefit and prudently established sets of assumptions. The intrinsic remaining problem is that the income of the member is not known at the time of the claim and can only be inferred from the corresponding level of contributions.

In summary, death and disability benefits are

- expressed in pre-determined language, but
- based on inferred earnings at the time of the claims event, which can only be determined on the basis of contributions actually paid, and
- are supported by the provision of a lump-sum funeral benefit to offset the expected costs of a funeral.

Incentives are assumed to take the form of contribution subsidies on a sliding scale. Again, as earnings are typically not defined, this scale cannot be defined in terms of income but can only be related to the contributions actually made to the fund, averaged over a period of five years. It is proposed, for the purposes of this arrangement, that:

- Contributions must be above a stipulated minimum, not only for operational viability but to manage the risk of gaming,
- Contributions up to the level of a specified first tier are matched by a subsidy on a one-to-one basis, and
- Contributions from the first tier to the corresponding second tier are matched by a subsidy at a level of half of the contribution in excess of the first tier.[344]

A disadvantage of this approach is that it incentivises members not to contribute at levels in excess of the first tier and, when they do choose to contribute at above the first tier, not above the second tier. This could be addressed by modifying the incentive arrangement to apply not to each contribution but to the total contributions paid over a specified period, say one year. This encourages regular, even contributions by members.

[344] The tiers could, for example, be linked to the corresponding levels of the social grants It the first tier is equal to half the level of the old age social grant and the second tier 1.5 x that level, then the total subsidy due by the state is limited to the level of the grant, intuitively consistent with the corresponding commitment to grant recipients.

Administration is assumed to be provided by a public-sector entity or registered retirement fund. Since the scheme is established specifically for informal-economy workers, it would be in a good position to meet the specific needs of these members. Convenience of contribution-payments is assumed to be high, with mobile money and other flexible payment methods easily available to members.

Assessment

Table 66: IV Benefits – Main categories of benefits (Commentary and Rating)

Benefits: Main categories of benefits	Commentary	Rating
Retirement benefits	The scheme is focused on the provision of a retirement benefit related to the level of earnings immediately prior to retirement. These earnings may only be inferred from the corresponding level of contributions and the potential for gaming is significant.	3
Survivor benefits	Survivor and disability benefits are calculated on the basis of contributions paid, as a (poor) proxy for income earned. A positive aspect of this design feature is that it incentivises contributions into the scheme.	3
Disability benefits		
Funeral benefits		
Early (partial) access to saving	No early access to accumulated savings is anticipated.	1

The arrangement promises to pay reasonable benefits across all types, but suffers from complexity and uncertainty relating to the challenges of definition. This is likely to undermine the confidence of members in the level of benefits due at any time.

Table 67: IV Benefits – Main categories of benefits (Commentary and Rating)

Benefits: Main categories of benefits	Commentary	Rating
Defined benefit	Theoretically defined with reference to income, these benefits are in practice related to contributions payable, but with significant funding risks resulting from mismatches of benefit and contribution and from the potential of member gaming.	3
Defined contribution	Benefits are related to the corresponding level of contributions paid by members, but without the clarity of the link that a simple defined contribution arrangement provides.	2
Hybrid design	The result is a hybrid design that includes elements of DB and DC, but risks combining the worst features of the respective designs rather than the best. Benefits are indeed defined, but opaquely rather than clearly. Funding risk nevertheless, remains. And, while the investment risk that characterises DC arrangements has been mitigated, it has been replaced by a different type of uncertainty.	2
Guarantees	Guarantees are provided at the cost of high levels of financial risk but, to the potential detriment of members, they are opaquely defined.	2
Early (partial) access to saving	Early access to saving is not anticipated.	1

The scheme theoretically provides defined benefit pension income. Since no information is available on earnings prior to retirement, however, and contributions themselves must be used as proxies for earnings, the benefit has elements of defined contribution arrangements, with the additional risk that members take advantage of the benefit

formula by making disproportionally larger contributions in the years immediately prior to retirement. This introduces significant funding risk.

Table 68: IV Benefits – Form of retirement benefit (Commentary and Rating)

Benefits: Form of retirement benefit	Commentary	Rating
Income	Retirement benefits are due primarily in the form of income, which is broadly appropriate.	4
Cash lump sum	A cash lump sum is available, but is limited so that income in retirement is not unduly eroded by the lump sum, where elected by members. Opacity of the method for converting retirement income to a lump sum which, on grounds of equity, changes with financial and demographic circumstances at the time, may further undermine the credibility of the scheme in the eyes of members.	2
Fund accessible for controlled drawdown	Controlled drawdown is not available under this proposal, which combines only income and a cash lump sum.	1
Combination of options	The cash lump sum is available in combination with pension income at the election of the member.	2

The available combination of income and lump sum is helpful but slightly undermined by the opacity of the conversion rates. Perhaps the best way to overcome this problem while not permitting undue cross-subsidy is to determine and publicise the conversation factors on a regular basis but limit changes to an appropriate frequency, say once a year.

Table 69: IV Benefits – Spouse- and dependent benefits (on death prior to retirement) (Commentary and Rating)

Benefits: Spouse- and dependent benefits (on death prior to retirement)	Commentary	Rating
Income	Spouse- and dependent benefits on death prior to retirement are available. The quantum of benefits is not easily determined or communicated because the income of the member is undefined. On the positive side, however, is the alignment of interests: benefits are determined on the basis of some relationship to contributions made, incentivising active participation in the fund by its members.	2
Cash lump sum waiver of premium		
Combination of options		

Death benefits are available but not easily calculated as they are likely to depend on contributions paid. This nevertheless offers opportunities for alignment with member interests.

Table 70: IV Membership and contribution arrangements (Commentary and Rating)

Membership and contribution arrangements	Commentary	Rating
Compulsory membership for all	Mandatory membership has not been considered, but a minimum contribution in excess of the corresponding level required for administrative viability may adversely impact take-up. Benefits depend directly on the contributions payable, which provides an element of incentivisation, though the tilt in the benefit formula towards contributions paid in the last few years of working age introduces an element of financing risk to the scheme.	2
Compulsory membership for all informal-economy workers		
Compulsory membership for specified group		
Voluntary membership		
Membership linked to affiliation		
Compulsory contributions		
Voluntary contributions		

No mandate on either membership or contributions are anticipated.

Table 71: IV Contributions – Formula for contribution level (Commentary and Rating)

Contributions: Formula for contribution level	Commentary	Rating
Flat minimum contribution	Apart from a likely Rand floor, for operational reasons, no limitations are placed on the contributions relative to earnings. As the benefit formula depends on earnings, however, income is implicitly inferred from contributions, without any attempt to ratify this income.	3
Minimum contribution as percentage of earnings		
No minimum contribution		
Employer co-contribution		
Government co-contribution		
Contribution expressed as % of earnings w/o min		

No formula is utilised to specify the level of the contribution payable.

Table 72: IV Contributions – Regularity of contribution payment (Commentary and Rating)

Contributions: Regularity of contribution payment	Commentary	Rating
Mandatory monthly payment	No requirements are placed on the regularity or frequency of contributions to the fund.	3
Facility to pay weekly		
Option to pay whenever		
Minimum periodical payment		

Flexibility of contribution payment is provided to members.

Table 73: IV Incentive arrangements (Commentary and Rating)

Incentive arrangements	Commentary	Rating
Offer access to other benefits	Incentives take a number of forms. (1) Explicit government subsidy of contributions is anticipated, encouraging active participation by members. (2) The benefit structure encourages contributions, both in the long term for pension benefits and, in the shorter term, in the formulation of the level of benefits on death prior to retirement. The danger of gaming in the years running up to retirement is a risk implicit in the structure of benefits.	4
Offer other benefits free		
Government co-contribution		
Access to other state benefits		
Early (partial) access to saving		
Offer choice of non-cash incentives		

Incentives are applied both at the level of the contribution and in the manner in which benefits are formulated.

Table 74: IV Withdrawals and vesting (Commentary and Rating)

Withdrawals and vesting	Commentary	Rating
No early access	No provision is made in the structure of benefits for early access to benefits.	1
Proportional access		
Access for specified purpose		
Early access limited to own contributions		
Automatic vesting after *x* years		

No early access is anticipated.

Table 75: IV Administrative backbone (Commentary and Rating)

Administrative backbone	Commentary	Rating
UIF	Though details have not been considered, the opportunity exists to establish an administrative backbone that aptly meets the needs of informal-economy members while retaining appropriate levels of efficiency.	4
New pension fund		
Existing fund		
Alternative standalone arrangement		

As the administrative infrastructure is to be developed specifically for this scheme, the potential exists for it to be established in the interests of members, while meeting efficiency goals.

Table 76: IV Delivery mechanism – Contribution receipt (Commentary and Rating)

Delivery mechanism: Contribution receipt	Commentary	Rating
Debit order only	Details on contribution mechanisms have not been specified but there is every reason to expect that contribution collection could be organised to include administrative options in the interests of members, including mobile money collection, for example.	4
Mobile money only		
Cash only		
Member choice		
Choice at industry level		

Member-centric options are realistically expected.

Table 77: IV Delivery mechanism – Benefit payment

Delivery mechanism: Benefit payment	Commentary	Rating
Cash only	Mobile money alternatives are less urgently needed in the case of benefit payments, which are larger on average, than contribution receipts, but may be provided if the system facilitates a range of contribution-payment alternatives.	4
Direct into bank account		
Direct into mobile wallet		
Member choice		

Likely to form part of the delivery mechanism.

Some elements of this plan would be difficult to design and financial risks are likely to exist. Nevertheless, the possibility of a final salary arrangement for informal-economy workers should not be ruled out without reasonable consideration.

Summary of Analysis

The table that follows puts the plans considered thus far alongside one another and summarises the attributes of each, using the ratings proposed earlier alongside a summarising comment for each.

Table 78: Summary of Analysis

	Simple DC	Smoothed DC	Career Average DB	Final-Salary DB
Benefits				

	Simple DC	Smoothed DC	Career Average DB	Final-Salary DB
Main categories				
Retirement benefits	3	4	4	3
	Poor incentives	Good focus	Sound focus	Gaming possible
Survivor & disability benefits	1	4	3	3
	No benefits	Incentivised	Salary definition	Income inferred
Early access to saving	1	1	1	1
	Not indicated	Not proposed	Not proposed	Not proposed
Retirement saving options				
Defined benefit	1	2	4	3
	Pure DC	Smoothing	Fundamental	Theoretical
Defined contribution	3	4	3	2
	No protection	Smoothed DC	Shared risk	Tenuous link
Hybrid design	1	4	4	2
	No risk sharing	Good features	Strong sharing	Some elements
Guarantees	2	3	3	2
	None	Annuities	With complexity	Financial risk
Form of retirement benefit				
Income	2	4	5	4
	Probably low	Income focus	Clear focus	Primary focus
Cash lump sum	3	3	1	2
	Good incentive	Available	Not indicated	Opaque basis
Controlled drawdown	1	1	1	1
	Not available	Not available	Not provided	Not considered
Combination of options	2	2	1	2
	Income & cash	Income & cash	Not available	Income & cash
Survivor benefits (death before retirement)	1	4	3	2
	None payable	Income	Income only	Complex
Membership and contribution arrangements	2	2	2	2
	None payable	Voluntary	Voluntary	Voluntary
Contributions				
Formula for contribution level	1	4	3	2
	None payable	Income	Income only	Complex
Regularity of contribution payment	2	2	2	2
	Poor incentives	Voluntary	Voluntary	Voluntary
Contributions				
Formula for contribution level	3	3	3	3
	Flexible	Flexible	Flexible	Flexible

	Simple DC	Smoothed DC	Career Average DB	Final-Salary DB
Regularity of contribution payment	3	3	3	3
	No mandate	No mandate	No mandate	No mandate
Incentives & vesting				
Incentive arrangements	1	4	5	4
	None offered	Co-contribution	With complexity	Lots of forms
Withdrawals	1	1	1	1
	None available	None available	None available	None provided
Delivery mechanisms				
Administrative backbone	3	3	3	4
	Efficiency likely	Alternatives	Efficiency likely	Focused
Contribution receipt	2	2	2	4
	Limited flexibility	No comments	Limited flexibility	Bespoke
Benefit payment	2	2	2	4
	Limited flexibility	Not considered	Limited flexibility	Bespoke
Summary comment	**Simple, but inequitable and inadequate**	**Effective, with limited guarantees**	**Good benefits, but unworkably complex in form**	**Possible but opaque with funding risk**

Lessons Learned through the Process

The table that follows works systematically through each of the criteria used to assess alternative designs. For each of these criteria, one or two lessons are put forward and their implications discussed.

Table 79: Insights gained from analysis

DESIGN FEATURE	INSIGHTS GAINED FROM ANALYSIS
Benefits	
Main categories	
Retirement benefits	The scheme should focus unambiguously on the provision of retirement benefits that are clearly understood by members and include protection against risks of various kinds.
Survivor & disability benefits	Survivor and disability benefits should be provided, but fit for purpose and at reasonable cost, to avoid compromising the primary focus, which is saving for retirement. A (flat-rate) funeral benefit should also be available.
Early access to saving	If early access to saving can be provided, efficiently, clearly and without unduly compromising other objectives, it should be seriously considered, perhaps addressing the demand for cash at retirement at the same time.
Retirement saving options	
Defined benefit (DB)	DB would be attractive, but is exceedingly difficult to provide transparently and safely in the absence of stable earnings. Since earnings are more commonly simply not available among workers in the informal economy, a proxy for (determining) income must be found to fit in to an earnings-related DB model. That calls for assumptions regarding the relationship between the contributions received and the earnings that permitted the payment of those contributions.
Defined contribution (DC)	Member accounts provide a more direct link of contributions to benefits, but do not automatically include some form of protection against the risks to which members are exposed.

DESIGN FEATURE	INSIGHTS GAINED FROM ANALYSIS
Hybrid design	A scheme with a balance of the features of DB and DC is attractive. Such a combination could combine the tangibility of DC with elements of the protection of DB arrangements.
Guarantees	Smoothing of annual returns (taking a part of the returns in good years and subjecting returns in poor years to a floor of zero) and fixing annuity conversion rates on an annual basis may need fiscal support in the short-term but should not incur substantial risk over time.
Form of retirement benefit	
Income	On macro- and microeconomic grounds, Income in retirement should be regarded as the primary benefit of the arrangement. A minimum income threshold might be considered necessary on the grounds of administrativeviability. Below this level the benefit would be paid as a lump sum. This threshold should be set as low as possible to avoid providing contribution disincentives to members in the pursuit of the cash at retirement.
Cash lump sum	A partial lump sum benefit at retirement could be made available, but not in addition to any facility providing early access to saving. A single fund for early access calls upon the member to choose between liquidity while working and cash on reaching retirement and improves the prospects for the worker of receiving a meaningful income in retirement.
Controlled drawdown	Subject to the early access facility indicated above, a controlled drawdown option is not considered appropriate in light of the policy focus on retirement benefits, but that part of the retirement benefit available as cash at retirement may be left in that account after retirement and withdrawn as required.
Combination of options	In summary, income in retirement in combination with a lump-sum option or early access from a single fund should be available but only as part of a broader scheme to provide early access to savings.
Survivor benefits (death before retirement)	Survivor benefits on death before retirement should be paid as an income, but should be set at the lowest total value reasonably regarded as sufficient to meet minimum requirements of income security for the surviving spouse or children, as reflected for the NSSF by the IDTT. Any death benefit with a total value below this should be paid as a lump sum rather than an income.
Membership and contribution arrangements	None of the prototype schemes include any initiatives to attract members to the scheme by pre-enrolling them or by collecting contributions through membership associations or affinity groups. Initiatives such as these must be explored with care in consultation with representative stakeholders.
Contributions	
Formula for contribution level	It is difficult to conceive of an arrangement in which, at the level of national mandate, contributions could be mandated, either as a percentage of income or as a Rand amount. This arrangement is underpinned, in other words, by voluntary contributions. Options should nevertheless be explored to encourage active member participation. This could take the form of scheme-wide incentives. But incentives may also be provided through local membership-based communities, with whom the Department should engage in depth prior to finalising the design.
Regularity of contribution payment	
Incentives & vesting	
Incentive arrangements	Incentives are proposed in the areas of contribution subsidies, early access to accumulated saving and membership club benefits. Benefit incentives, in other words, bonuses on attaining a specified level ofsaving, are not regarded as appropriate to this scheme, as the cost is regarded as exceeding the potential incentive benefit. Thresholds such as these can also distort the behaviour of members and may be seen to be to the detriment of members who are unable to contribute at the required higher level. Grandfathering, the provision of benefits that members have not accrued by virtue of their contributions, is also not regarded as appropriate in a framework in which it is not clear, under either a DC or DB structure, how such a benefit might be clearly defined.
Withdrawals	
Delivery mechanisms	
Administrative backbone	The administrative system must be suitable to informal-economy members, utilising a range of cost-effective mobile- and electronic money-transfer channels. Members are to be provided regular, helpful information, in a format convenient to them, regarding their contributions and access to savings. The cost of risk benefits is funded from contributions, but the cost of administration is separately covered by government. The scheme may fall under either social-security or pension-fund law, but must be subject to the highest standards of governance with the support of independent oversight.
Contribution receipt	
Benefit payment	

Annexure 10: Modelling: Methodology & Assumptions

Table 80: Modelling: Methodology & Assumptions

<table>
<tr><td>South African population projected to 2065</td><td>Projections from the 2008 AIDS model of the Actuarial Society of South Africa (ASSA) was used to derive the projected female/male population and the projected female/male deaths for each year by age.</td></tr>
<tr><td>Informal-economy employed population projected to 2065</td><td>Informal-economy workers form a sub-set of the South African population. To derive the projected number of individuals in the informal economy, the distribution by age of the modelled population was developed with reference to Statistics South Africa's Labour Force Survey and the age make-up of the total population. In order to project the set of informal-economy workers into the future, it was assumed that the ratio of these workers to the total population at each age would remain constant over the period, so that the number of individuals in the informal economy could be derived from the projection of the total South African population.</td></tr>
<tr><td>Participation in the scheme</td><td>Participation over age was modelled stochastically, using a triangular distribution with the following parameters (and linear interpolation for ages in-between):

Age last birthday | Minimum participation | Median participation | Maximum participation
18 | 0.5% | 1% | 10%
59 | 20% | 50% | 80%

Gradual take-up to the above participation rates is modelled from 2020 until 2028, to reflect increasing awareness over time, until participation in the system reaches maturity. In each year the minimum level for the triangular distribution is at 25% of the median and the maximum at 125% of the median.

Year | Minimum participation | Median participation | Maximum participation
2020 | 2020 | 10% | 12.5%
2021 | 2021 | 20% | 25.0%
2022 | 2022 | 30% | 37.5%
2023 | 2023 | 40% | 50.0%
2024 | 2024 | 50% | 62.5%
2025 | 2025 | 60% | 75.0%
2026 | 2026 | 70% | 87.5%
2027 | 2027 | 80% | 100.0%
2028 | 2028 | 90% | 100.0%
2029+ | 2029+ | 100% | 100%</td></tr>
<tr><td>Income of participants in the scheme</td><td>Income was assumed as set out in in Section 4, with annual price inflation adjustment. [Note: To ensure that the uneven progression of income over age does not unduly influence the results, cumulative smoothing over age was used. The average income within an age band was derived by dividing the total earnings up to that age by the total number of respondents up to that age.</td></tr>
<tr><td>Contribution rates for participants in the scheme</td><td>All participants are assumed to contribute to the scheme at the same rate. This is numerically equivalent to modelling the average rate of contribution among those contributing at the time, weighted by the earnings of all contributors. Contribution rates were assumed to increase over age. These rates were modelled stochastically, using a simple triangular distribution with the following parameters (and linear interpolation for ages in-between):

Age last birthday | Minimum contribution % | Median contribution % | Maximum contribution%
18 | 2.5% | 5.0% | 7.5%
59 | 2.5% | 7.5% | 15.0%

Projections were carried out at time intervals of one year. No assumptions were therefore called for regarding the frequency with which contributions were made. Also, contributions made were assumed always to be larger than any minimum contribution required under the rules of the scheme. [This implies that participants with low earnings made contributions less frequently than monthly where necessary to avoid falling foul of the minimum-contribution threshold.]</td></tr>
<tr><td>Split of contributions towards risk & savings</td><td>80% of [own + subsidy] contributions are allocated towards the participant's individual savings, with the balance 20% of contributions going towards the overall risk pool (from which all risk benefits will be paid). This proportion is assumed altered in future following actuarial review.</td></tr>
<tr><td>Savings withdrawals</td><td>For modelling purposes, it was assumed that participants make no withdrawals from the accessible portion of their accumulated savings. This is not considered a realistic assumption, but is used to show the spread of the total accumulation that would be obtained in the absence of these withdrawals, which would reduce such an accumulation proportionally.</td></tr>
</table>

Economic assumptions	Price inflation was assumed at 6% per annum Smoothed investment return, net of asset management costs, was assumed at 7.5% per annum
Risk benefit assumptions	*Death before age 60*: Mortality was assumed in line with the 2008 AIDS model published by the ASSA, averaged across the South African population on an age- and gender-distinguished basis, without distinction for HIV status. For the dependent's *benefit*, the number of children per participant was determined with reference to the Total Fertility Rates published by Statistics South Africa in the 2018 mid-year population estimates. To model this parameter stochastically, the 2018 variation by province was used to establish a triangular distribution as follows: minimum 2.04 / median 2.40 / maximum 2.89. Child mortality was ignored in the calculation. For the *spouse's benefit*, the mortality of the partner was ignored For the *funeral benefit*, a return of the member's own contributions was modelled (with the Government subsidy portion going to the general risk pool to support the cost of providing death- and disability benefits). *Disability before age 60*: Total and permanent disability, with the inability to perform any work, was assumed as the benefit trigger (e.g. quadriplegia). As such the duration for the disability payments runs from date of disablement until retirement from the scheme. To model this parameter stochastically, the incidence hereof at each age was assumed as a percentage of the number of deaths at that age as follows: minimum 10.5% / median 21% /maximum 31.5% *Death after age 60*: Mortality per ASSA's 2008 AIDS model, to derive the monthly pension that a member will be able to buy with the accumulated savings amount.
Cost of administration of the scheme	It was assumed that there will be an annual drop-off of 5% from active participation in the scheme. This allows for the likelihood that the number of records being administered at a point in time will be more than the number of active participants at that time. Furthermore, it was assumed that the annual cost to administer each member record will be R300 in 2020. This is roughly 75% of the average equivalent in the insurance industry (accounting for the scale benefits of this scheme) and consistent with the cost per member derived from the UIF's 2018 financial statements (R2.1 billion administration expense for circa 8 million members, inflation adjusted to 2020).

Annexure 11: Modelling: Supporting Detail

This annexure provides more detail on the following salient aspects of supporting detail:

1. Projected South African population between the ages of 18 and 59
2. Projected number of workers in the South African informal economy (ages 18-59 & thus potential participants in the scheme)
3. Projected number of participants in the scheme (ages 18-59)
4. Projected penetration of the targeted population
5. Projected contribution by participants to the scheme (in R'm, nominal money terms)
6. Projected number of member records being administered | Pre-retirement
7. Projected number of member records being administered | Post-retirement
8. Projected cost of the scheme's administration (R'm, nominal money terms)
9. Projected assets under management in the savings pool (R'm, nominal money terms)
10. Projected net asset value of the risk pool (R'm, nominal money terms)
11. Projected total cost to Government | Contribution subsidy & administration cost combined (R'm, nominal money terms)
12. Projected number of pre-retirement risk claims
13. Projected capitalised value of pre-retirement risk claims (R'm, nominal money terms)
14. Replacement factors | Retirement at 60 versus retirement at 65 (after participating in the scheme throughout working life)
15.

Projected South African population between the ages of 18 and 59

Table 81: Projected South African population between the ages of 18 and 59 (Male)

Male	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
18-24	3 599 891	3 481 994	3 398 587	3 402 388	3 401 527	3 369 928	3 307 894	3 227 458	3 154 905	3 100 627
25-34	4 704 053	4 823 975	4 849 987	4 694 993	4 629 734	4 643 690	4 636 624	4 586 887	4 498 626	4 396 114
35-44	3 683 032	4 073 677	4 218 513	4 343 789	4 369 136	4 238 130	4 193 017	4 216 628	4 219 048	4 181 403
45-54	2 470 357	2 721 799	3 071 669	3 427 446	3 573 128	3 695 815	3 725 032	3 624 090	3 598 808	3 630 378
55-59	1 662 850	1 757 340	1 893 371	2 085 836	2 384 898	2 679 097	2 807 316	2 922 819	2 954 530	2 887 177
Total	**16 120 184**	**16 858 785**	**17 432 127**	**17 954 452**	**18 358 423**	**18 626 660**	**18 669 883**	**18 577 882**	**18 425 917**	**18 195 698**

Table 82: Projected South African population between the ages of 18 and 59 (Female)

Female	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
18-24	3 604 625	3 487 190	3 400 265	3 401 214	3 398 000	3 364 320	3 300 481	3 218 470	3 144 473	3 088 862
25-34	4 712 271	4 854 217	4 894 407	4 739 195	4 667 718	4 676 795	4 665 018	4 610 322	4 517 094	4 409 788
35-44	3 737 837	4 049 114	4 197 962	4 362 982	4 408 017	4 275 288	4 221 771	4 238 332	4 233 585	4 188 456
45-54	2 855 651	2 974 816	3 170 426	3 456 287	3 635 285	3 807 957	3 857 254	3 748 630	3 711 066	3 733 670
55-59	2 271 291	2 350 166	2 381 992	2 443 169	2 626 659	2 886 605	3 054 156	3 224 378	3 274 476	3 191 642
Total	**17 181 676**	**17 715 502**	**18 045 052**	**18 402 847**	**18 735 679**	**19 010 965**	**19 098 680**	**19 040 132**	**18 880 694**	**18 612 418**

Table 83: Projected South African population between the ages of 18 and 59 (Female) (Total)

Total	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
18-24	7 204 517	6 969 184	6 798 852	6 803 603	6 799 527	6 734 249	6 608 375	6 445 928	6 299 378	6 189 489
25-34	9 416 324	9 678 192	9 744 394	9 434 188	9 297 452	9 320 485	9 301 642	9 197 209	9 015 720	8 805 902
35-44	7 420 869	8 122 791	8 416 475	8 706 771	8 777 153	8 513 418	8 414 788	8 454 960	8 452 633	8 369 859
45-54	5 326 009	5 696 615	6 242 095	6 883 732	7 208 413	7 503 771	7 582 286	7 372 720	7 309 874	7 364 047
55-59	3 934 142	4 107 506	4 275 363	4 529 005	5 011 556	5 565 701	5 861 471	6 147 197	6 229 006	6 078 819
Total	**33 301 860**	**34 574 287**	**35 477 179**	**36 357 300**	**37 094 102**	**37 637 625**	**37 768 563**	**37 618 014**	**37 306 611**	**36 808 116**

Projected number of workers in the South African informal economy (ages 18-59 & thus potential participants in the scheme)

Table 84: Projected number of workers in the South African informal economy (ages 18-59 & thus potential participants in the scheme) (Male)

Male	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
18-24	116 065	112 264	109 575	109 698	109 670	108 651	106 651	104 058	101 718	99 968
25-34	665 270	682 230	685 909	663 989	654 760	656 733	655 734	648 700	636 218	621 720
35-44	726 301	803 336	831 898	856 603	861 602	835 767	826 871	831 527	832 004	824 580
45-54	485 289	534 683	603 413	673 303	701 922	726 023	731 763	711 933	706 967	713 168
55-59	119 675	124 102	139 578	151 827	179 690	193 992	197 829	208 621	203 022	198 752
Total	**2 112 600**	**2 256 616**	**2 370 373**	**2 455 420**	**2 507 643**	**2 521 166**	**2 518 847**	**2 504 839**	**2 479 928**	**2 458 188**

Table 85: Projected number of workers in the South African informal economy (ages 18-59 & thus potential participants in the scheme) (Female)

Female	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
18-24	93 311	90 271	88 021	88 046	87 963	87 091	85 438	83 315	81 400	79 960
25-34	533 923	550 006	554 560	536 973	528 875	529 903	528 569	522 371	511 808	499 650
35-44	570 473	617 980	640 697	665 883	672 756	652 499	644 331	646 859	646 134	639 247
45-54	378 062	393 839	419 736	457 581	481 279	504 139	510 666	496 285	491 312	494 304
55-59	93 575	93 230	98 106	99 505	112 603	121 783	126 527	134 514	130 886	127 605
Total	**1 669 344**	**1 745 326**	**1 801 120**	**1 847 988**	**1 883 475**	**1 895 415**	**1 895 531**	**1 883 344**	**1 861 539**	**1 840 766**

Table 86: Projected number of workers in the South African informal economy (ages 18-59 & thus potential participants in the scheme) (Total)

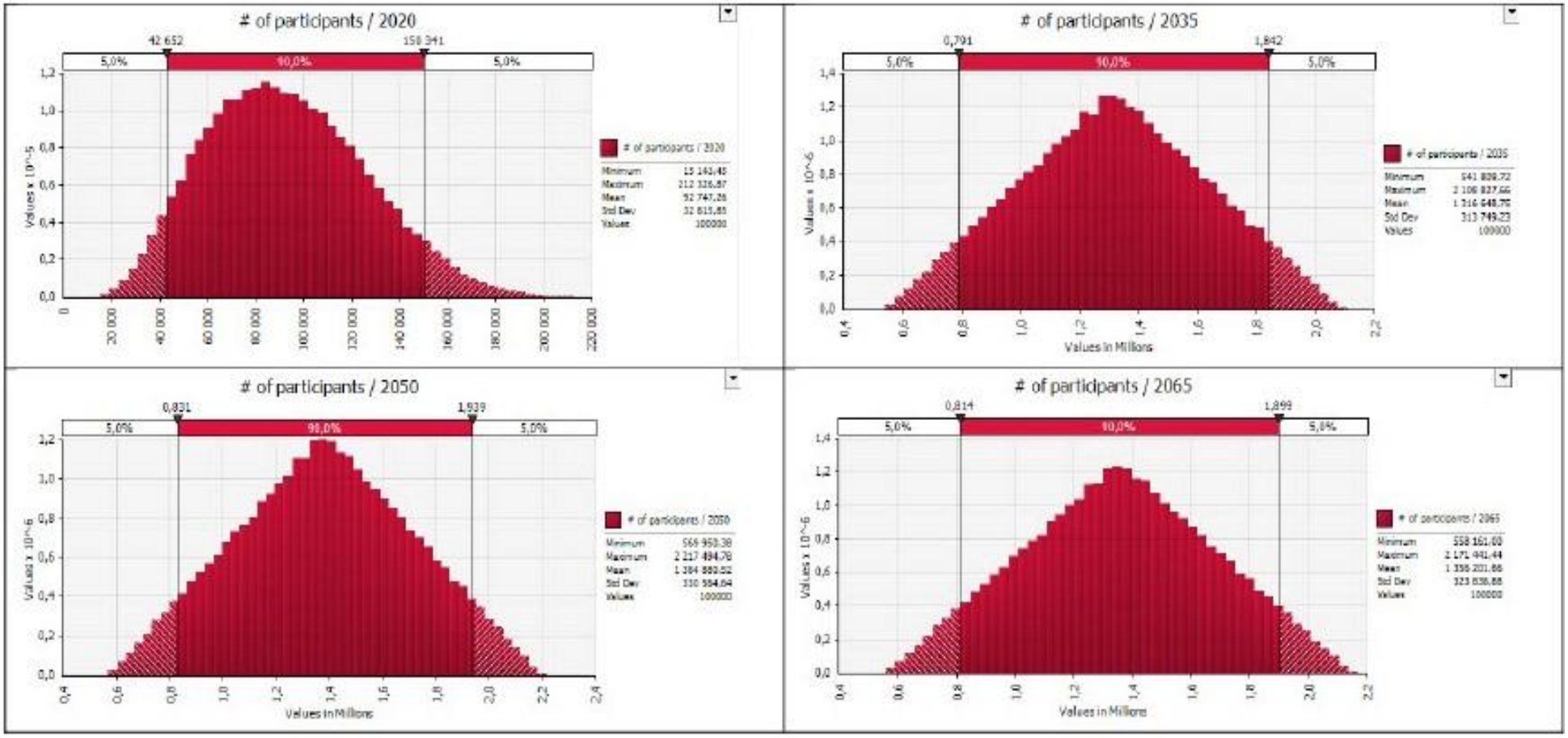
Total	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
18-24	209 377	202 535	197 596	197 743	197 632	195 742	192 089	187 373	183 118	179 928
25-34	1 199 193	1 232 236	1 240 469	1 200 962	1 183 634	1 186 637	1 184 303	1 171 072	1 148 026	1 121 370

35-44	1 296 773	1 421 316	1 472 596	1 522 486	1 534 358	1 488 266	1 471 202	1 478 385	1 478 138	1 463 827
45-54	863 351	928 522	1 023 149	1 130 885	1 183 201	1 230 162	1 242 428	1 208 218	1 198 278	1 207 473
55-59	213 250	217 332	237 684	251 332	292 293	315 774	324 356	343 135	333 908	326 357
Total	**3 781 944**	**4 001 942**	**4 171 493**	**4 303 409**	**4 391 119**	**4 416 581**	**4 414 378**	**4 388 183**	**4 341 468**	**4 298 955**

Projected number of participants in the scheme (ages 18-59) [345]

Figure 15: Projected number of participants in the scheme (ages 18-59)

	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
# of participants	92 735	593 747	1 255 920	1 316 649	1 362 424	1 380 253	1 384 880	1 379 551	1 365 602	1 356 202

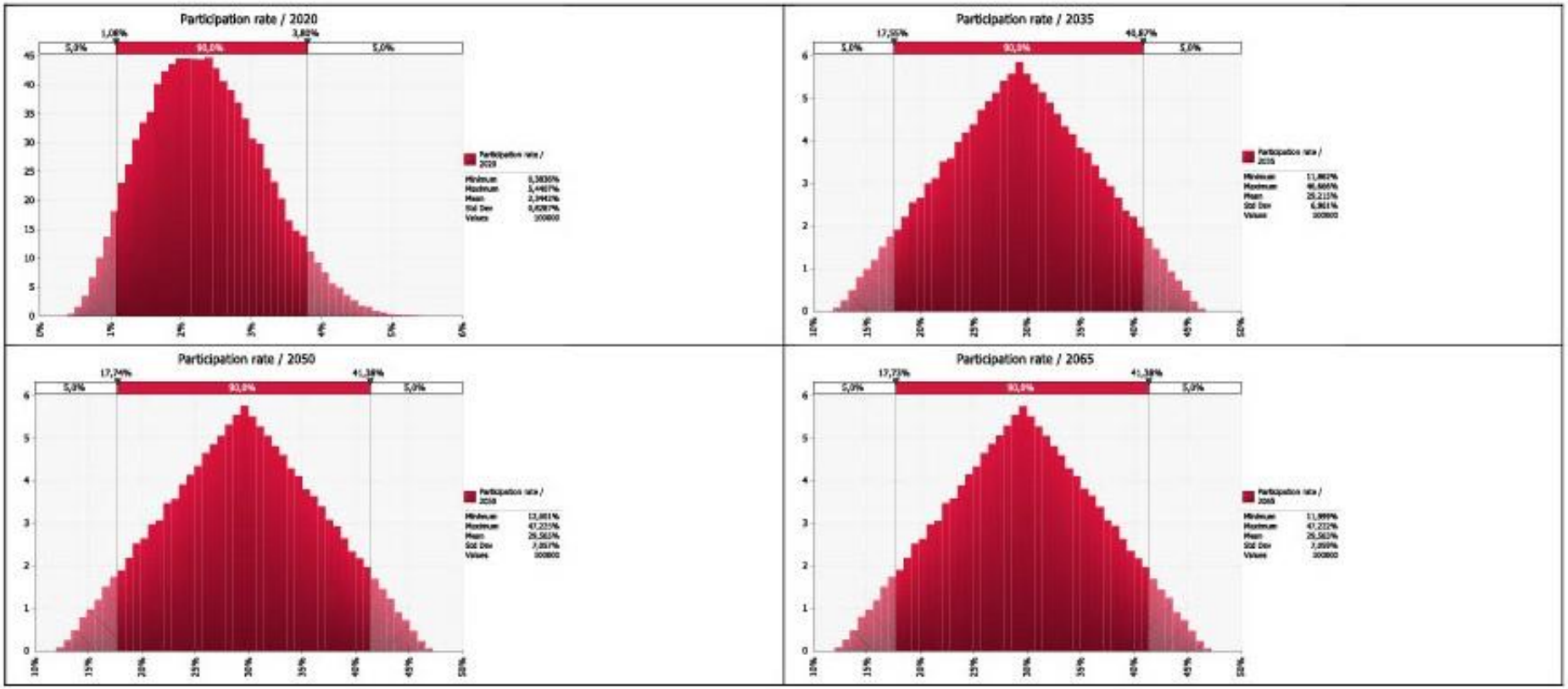


[345] The table shows the theoretical mean for each year, whereas the mean in each graph is the sample mean, as observed from the 100 000 runs that was performed. The sample mean will approach the theoretical mean as more and more runs are performed. The same comment applies to the pages that follows in this Appendix, but in the interest of brevity this note is not repeated each time.

Projected penetration of the targeted population

Figure 16: Projected penetration of the targeted population

	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
# of participants	92 735	593 747	1 255 920	1 316 649	1 362 424	1 380 253	1 384 880	1 379 551	1 365 602	1 356 202
Targeted population [295]	3 781 944	4 001 942	4 171 493	4 303 409	4 391 119	4 416 581	4 414 378	4 388 183	4 341 468	4 298 955
Penetration rate	2%	14%	29%	29%	30%	30%	30%	30%	29%	30%



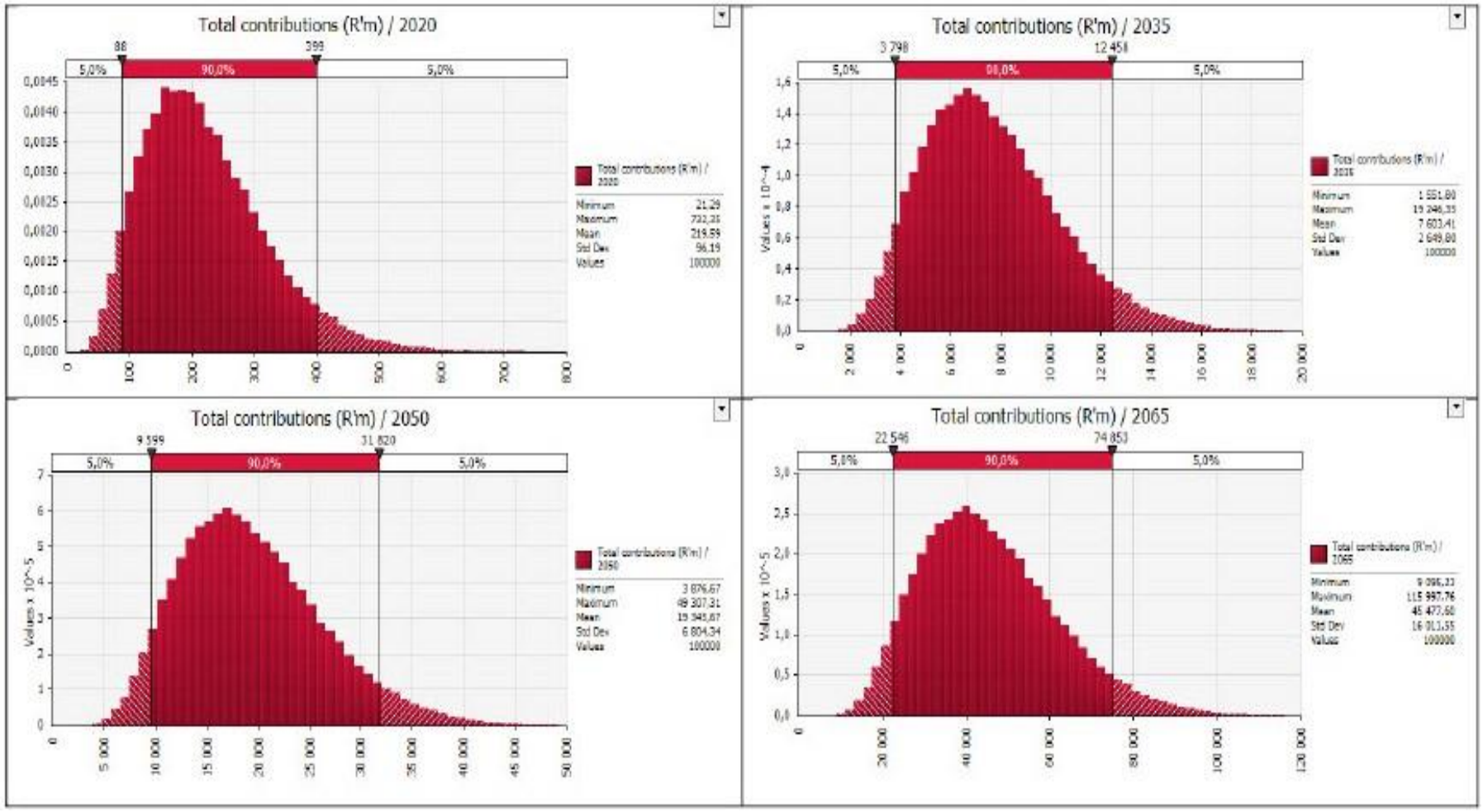
346

346 Projected number of workers in the South African informal economy (ages 18-59 & thus potential participants in the scheme)

Projected contribution by participants to the scheme (in R'm, nominal money terms)

Figure 17: Projected contribution by participants to the scheme (in R'm, nominal money terms)

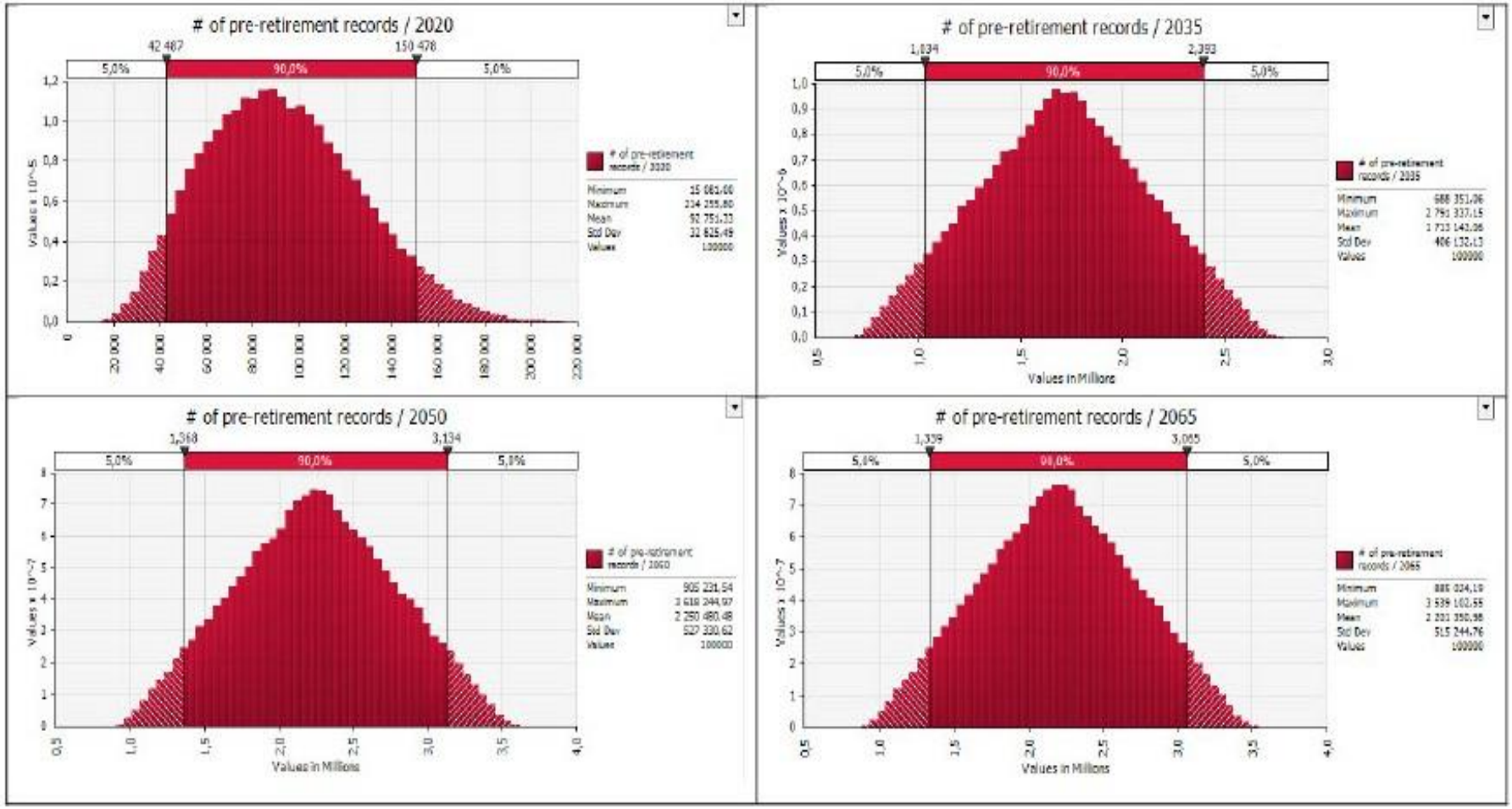
	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
Participant contributions (R'm)	220	1 889	5 385	7 603	10 585	14 391	19 345	25 806	34 184	45 475



Projected number of member records being administered | Pre-retirement

Figure 18: Projected number of member records being administered | Pre-retirement

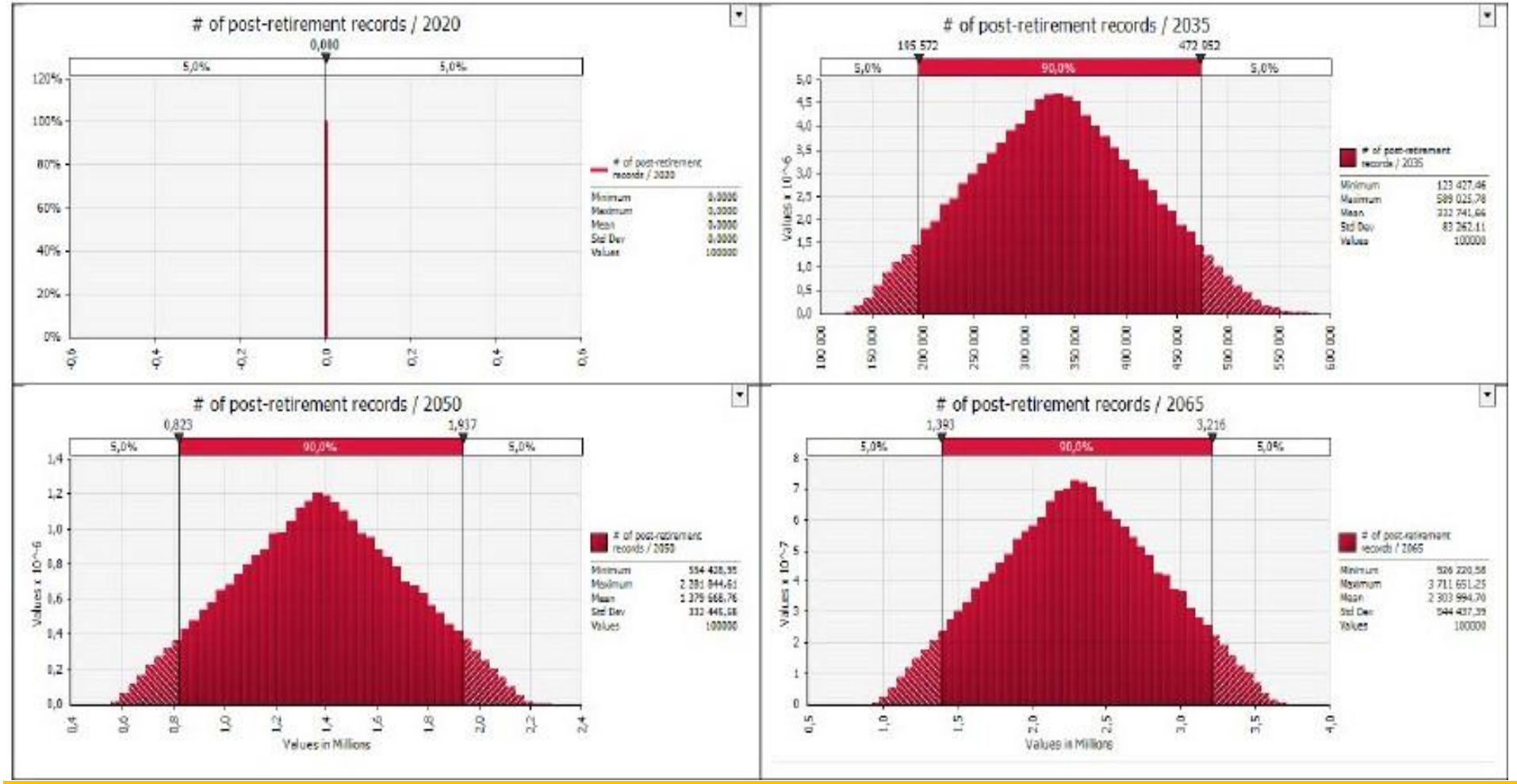
	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
# of Pre-retirement records	92 735	625 265	1 373 497	1 705 652	1 974 128	2 165 498	2 248 795	2 265 280	2 227 254	2 200 863



Projected number of member records being administered | Post-retirement

Figure 19: Projected number of member records being administered | Post-retirement

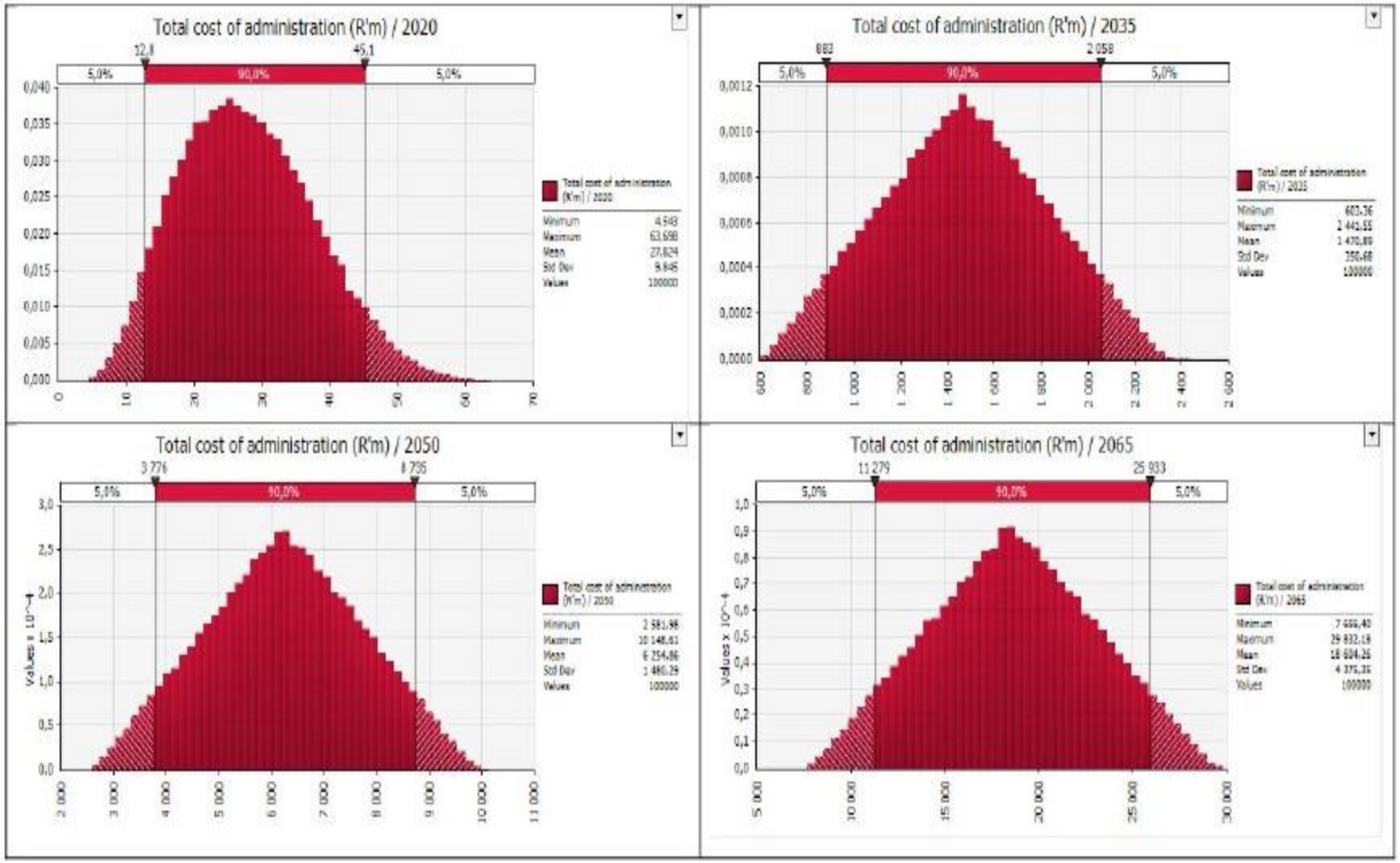
	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
# of Post-retirement records	0	36 620	121 989	308 885	582 535	948 480	1 360 546	1 753 019	2 084 335	2 298 534



Projected cost of the scheme's administration (R'm, nominal money terms)

Figure 20: Projected cost of the scheme's administration (R'm, nominal money terms)

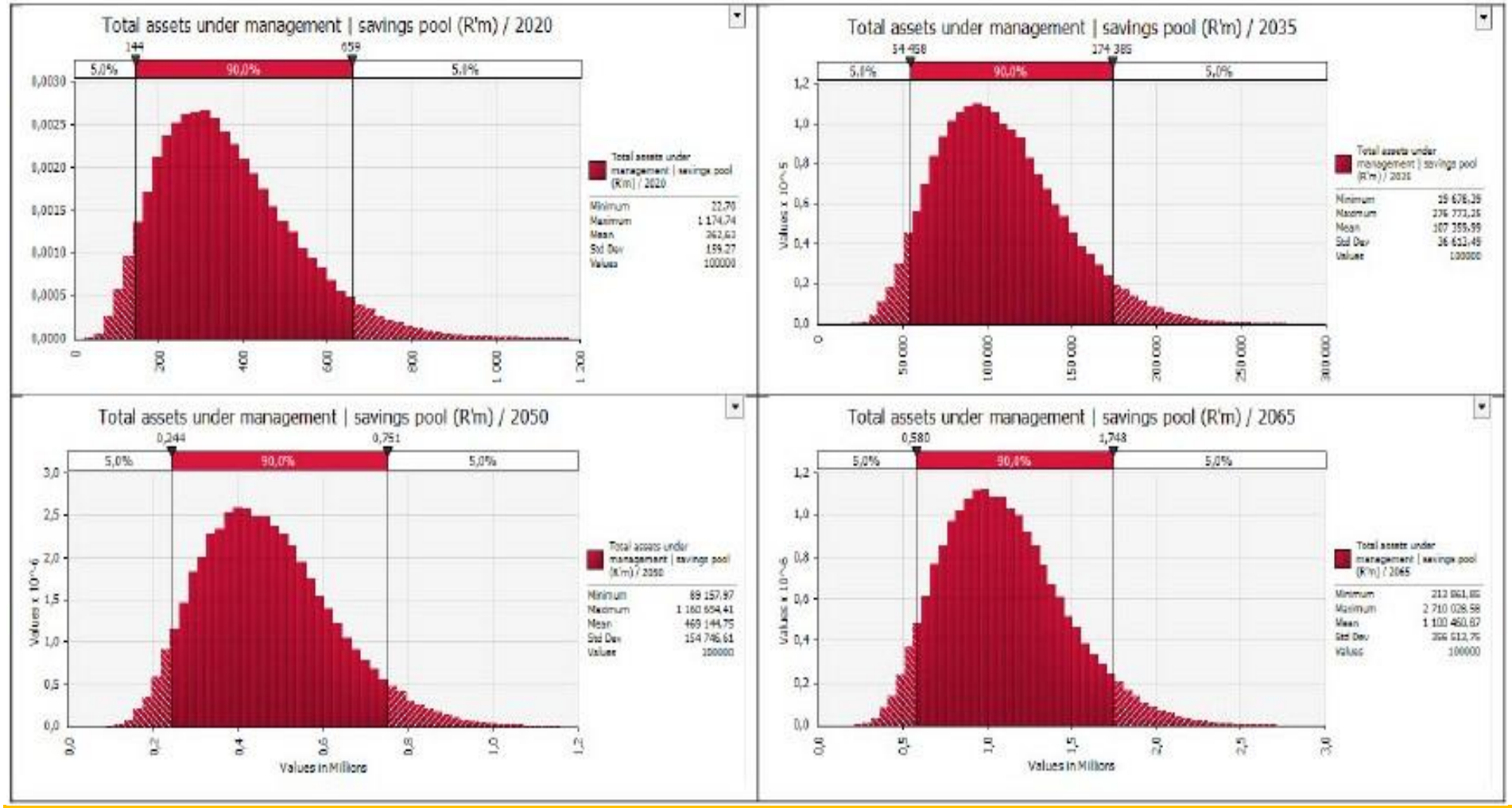
	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
Cost of scheme administration	28	266	803	1 448	2 460	4 009	6 219	9 265	13 304	18 580



Projected assets under management in the savings pool (R'm, nominal money terms)

Figure 21: Projected assets under management in the savings pool (R'm, nominal money terms)

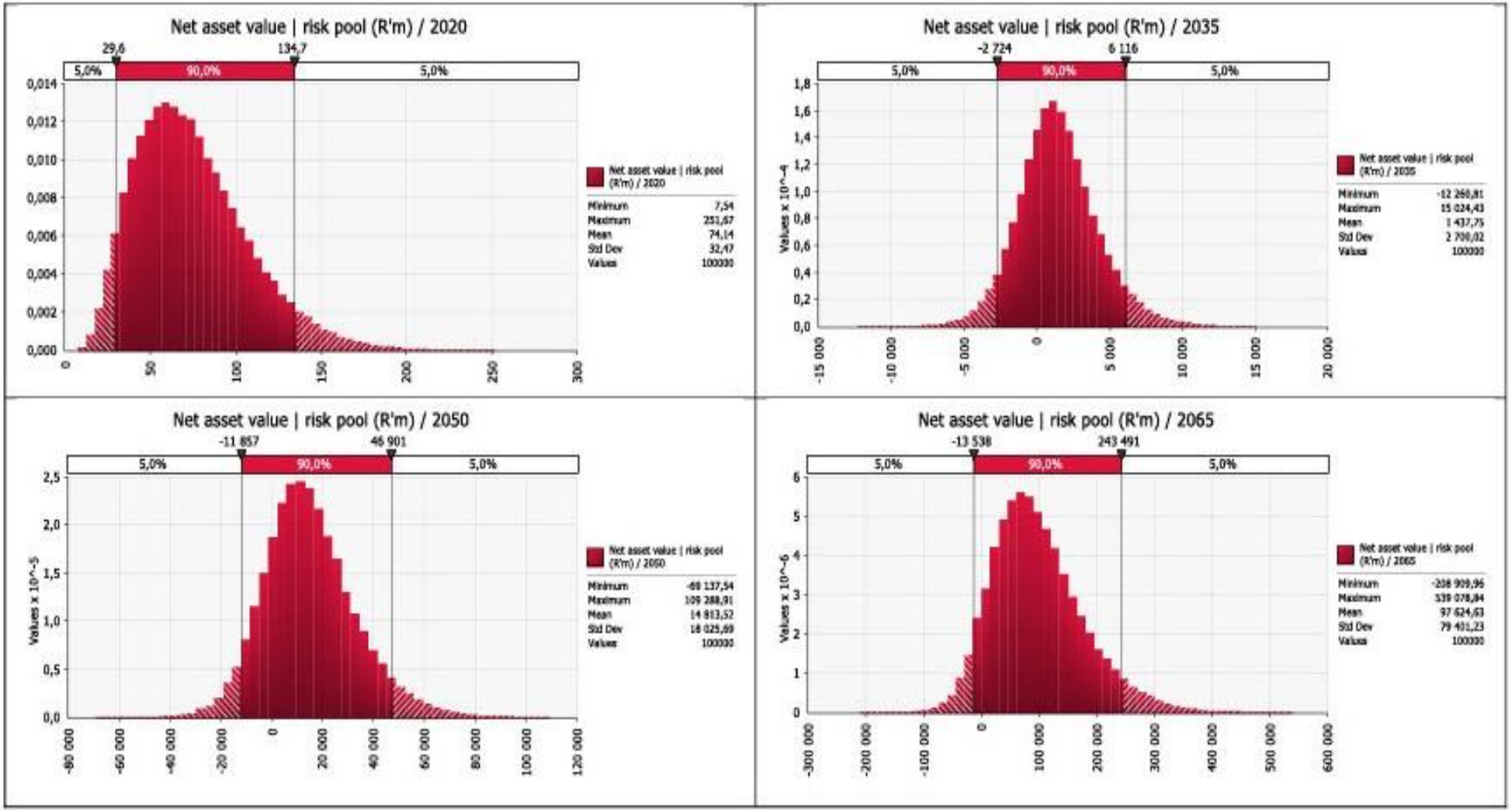
	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
Savings pool assets	362	10 152	43 831	107 319	200 708	321 192	468 991	647 519	847 789	1 100 122



Projected net asset value of the risk pool (R'm, nominal money terms)

Figure 22: Projected net asset value of the risk pool (R'm, nominal money terms)

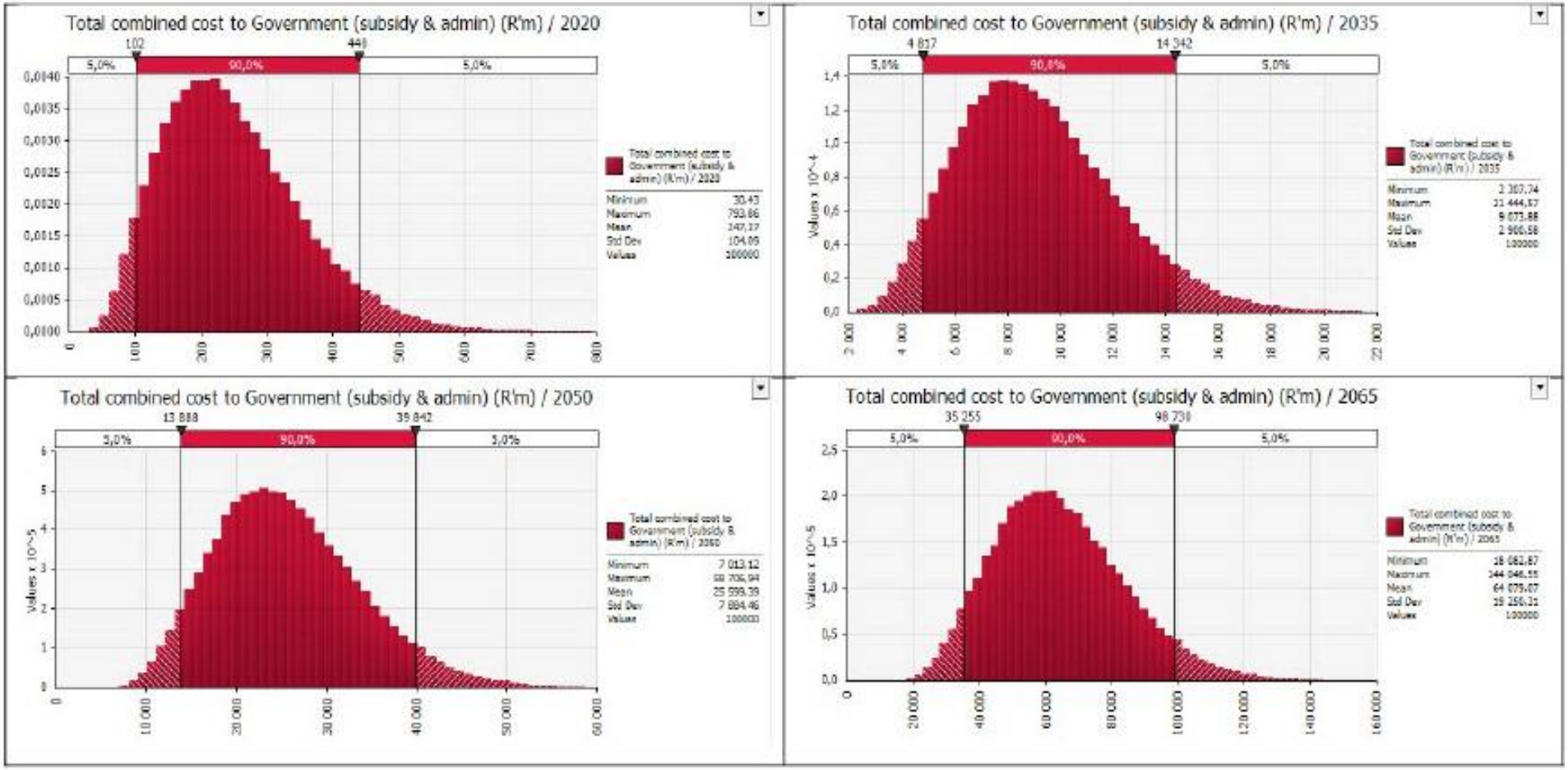
	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
Risk pool assets	74	288	470	1 433	4 051	6 409	14 780	29 739	55 282	97 478



Projected total cost to Government | Contribution subsidy & administration cost combined (R'm, nominal money terms)

Figure 23: Projected total cost to Government | Contribution subsidy & administration cost combined (R'm, nominal money terms)

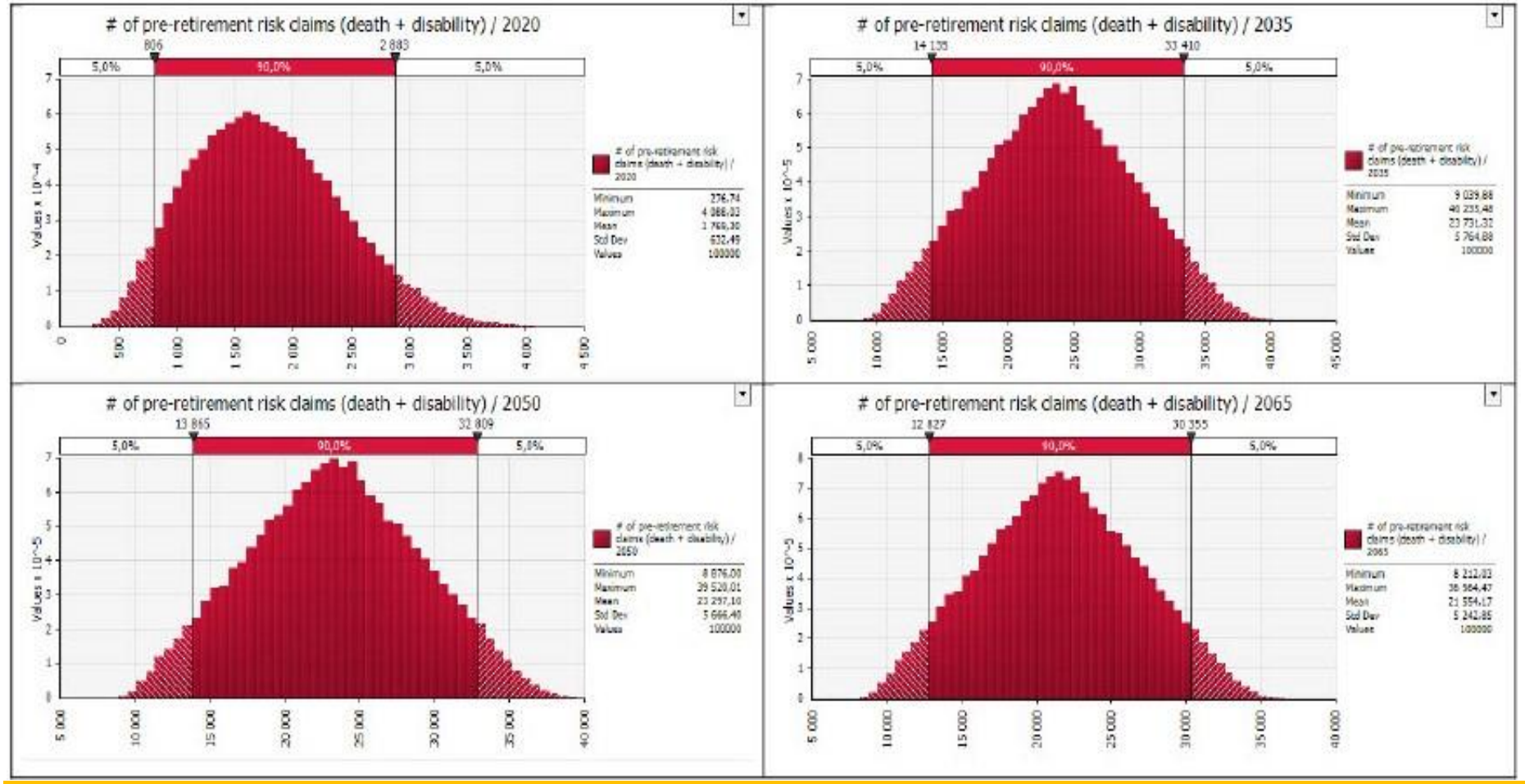
	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
Total cost to Government	247	2 155	6 188	9 051	13 044	18 400	25 564	35 072	47 488	64 055
Contribution subsidy as % of total cost	*89%*	*88%*	*87%*	*84%*	*81%*	*78%*	*76%*	*74%*	*72%*	*71%*
Scheme administration as % of total cost	*11%*	*12%*	*13%*	*16%*	*19%*	*22%*	*24%*	*26%*	*28%*	*29%*



Projected number of pre-retirement risk claims

Figure 24: Projected number of pre-retirement risk claims

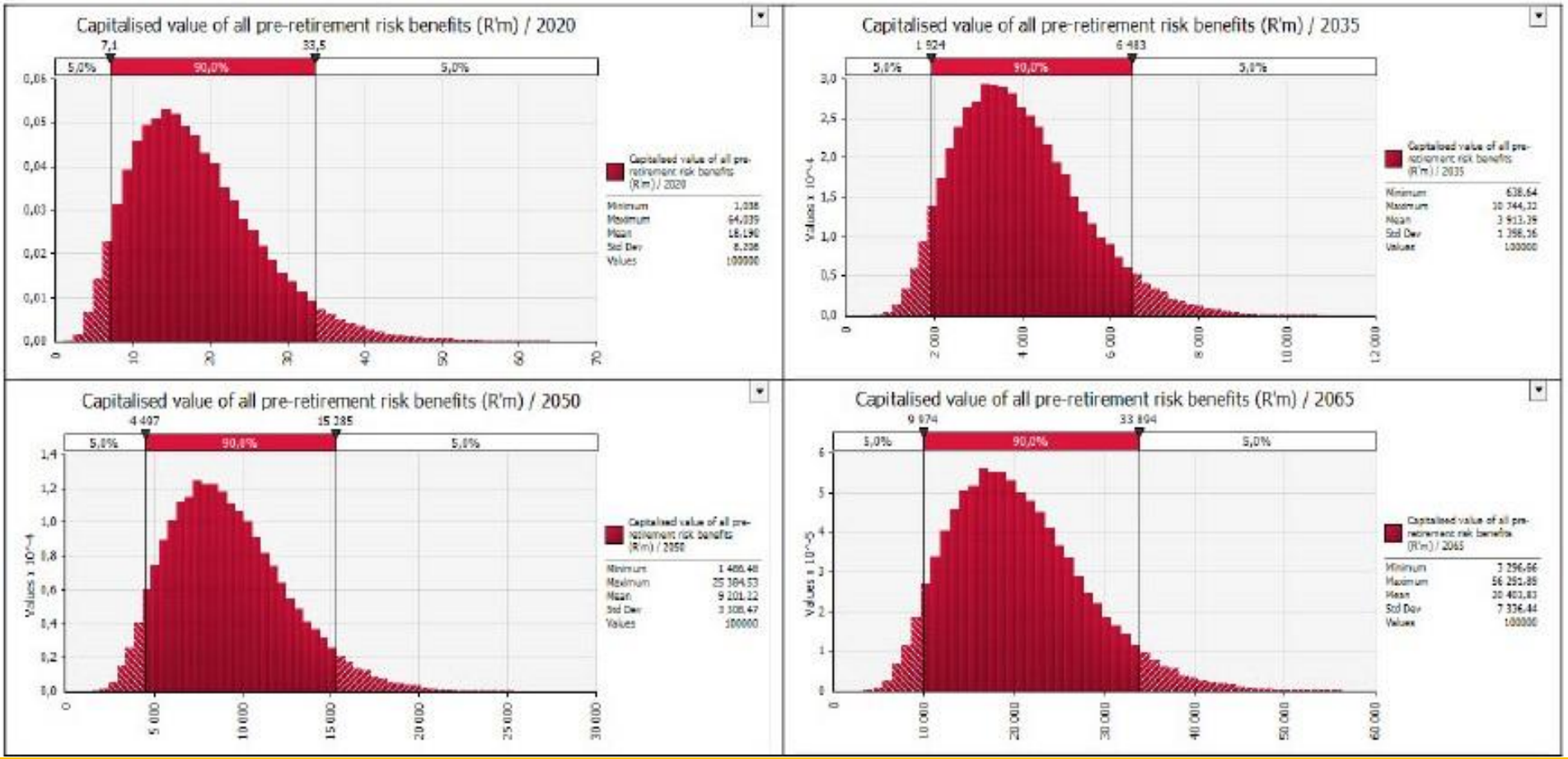
	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
Number of deaths	1 463	9 416	19 751	19 625	19 761	19 591	19 266	18 818	18 253	17 824
Number of disabilities	306	1 970	4 133	4 106	4 135	4 099	4 031	3 937	3 819	3 730
Total number of risk claims	1 769	11 386	23 884	23 731	23 896	23 690	23 297	22 756	22 072	21 554



Projected capitalised value of pre-retirement risk claims (R'm, nominal money terms)

Figure 25: Projected capitalised value of pre-retirement risk claims (R'm, nominal money terms)

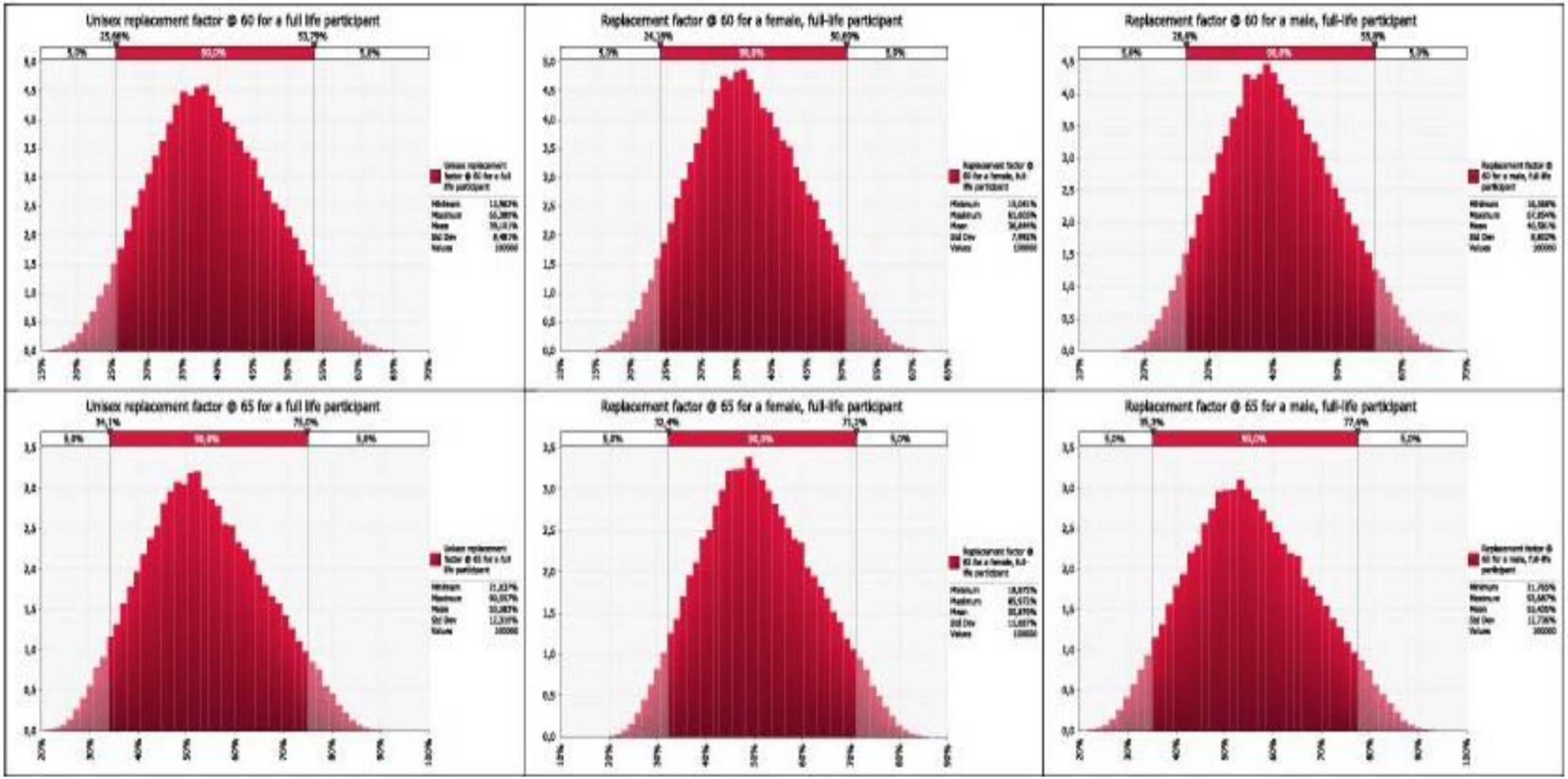
	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065
Return of contributions	2	171	807	1 080	1 465	2 055	2 569	3 360	4 356	5 694
Death pensions	10	485	1 370	1 835	2 488	3 489	4 362	5 704	7 396	9 668
Disability pensions	6	271	749	997	1 321	1 824	2 266	2 948	3 847	5 034
Total capitalised value	18	927	2 926	3 912	5 274	7 368	9 197	12 012	15 600	20 395



Replacement factors | Retirement at 60 versus retirement at 65 (after participating in the scheme throughout working life)

Figure 26: Replacement factors | Retirement at 60 versus retirement at 65 (after participating in the scheme throughout working life)

	Retirement @ age 60	Retirement @ age 65
If unisex rates are used for all retirees	39%	54%
If gender specific rates are used | Female retiree	37%	51%
If gender specific rates are used | Male retiree	41%	55%



Annexure 12: Key Sensitivities

The targeted split between risk and savings

A key design decision relates to the targeted split between the portion of contributions allocated to risk benefits and the [balance] portion being invested towards retirement savings. The allocation towards retirement savings, culminates in the eventual replacement rate at retirement. As such the replacement ratio can be used as the key indicator that shows the effect of allocating less to savings.

The table below shows the sensitivity of the projected replacement rates (for whole life participants on the scheme, who retire at age 60) to the proportion of contributions allocated to go towards retirement savings. This is shown in the table on three bases: [1] The proposed design, where 80% of contributions are targeted towards retirement savings, [2] sensitivity #1, where 70% of contributions go towards retirement savings and [3] sensitivity #2, where 60% of contributions go towards retirement savings. As is evident, participants lose about 5% in replacement for every 10% less that goes towards savings (on unisex rates).

Table 87: Sensitivity of the projected replacement rates

	Proposed design 20%-80% risk/savings split	Sensitivity #1 30%-70% risk/savings split	Sensitivity #2 40%-60% risk/savings split
Unisex replacement @ 60	39%	34%	29%
Female replacement @ 60	37%	32%	28%
Male replacement @ 60	41%	36%	30%

The cost of enhancing pre-retirement death benefits

The proposed design allows for a 2-year pension to the spouse and to dependent (<18) children. In this section, two sensitivities are considered: [1] increasing the pension period to 5 years (for both spouse and children) and [2] increasing the pension period for spouses to 5 years and for children to only expire on their 23rd birthday. For modelling purposes, the way in which the pension amount is calculated (i.e. the benefit formula), was kept the same as in the proposed design. i.e. the results show the effect if the same amount is paid, just for longer.

Table 88: Considered sensitivities

	Effect on the risk pool	Effect on risk/savings split	Effect on replacement %
Proposed design 2-year spouse's pension 2-year children's pension	If contributions are split 20%-80% towards risk/savings, the risk pool is 68% certain to remain solvent up to 2065	Unisex replacement rate at age 60 is 39%	
Sensitivity #1 5-year spouse's pension 5-year children's pension	If contributions are still split 20%-80% towards risk/savings, the risk pool is 100% certain to go insolvent prior to 2065	38% of contributions must be allocated to risk to ensure the risk pool is as certain to remain solvent as in the proposed design	If contributions are split 38%-62% between risk/savings, the unisex replacement rate at 60 reduces to 30%
Sensitivity #2 5-year spouse's pension Child pensions to age 23		59% of contributions must be allocated to risk to ensure the risk pool is as certain to remain solvent as in the proposed design	If contributions are split 59%-41% between risk/savings, the unisex replacement rate at 60 reduces to 20%

Total Cost to Government

Government's financial commitment to the scheme is dual in nature, made up of [1] a contribution subsidy and [2] the cost of administering the scheme.

1. The financial cost of the contribution subsidy will mainly depend on the take-up of the scheme and the levels at which participants then contribute. These uncertainties have been allowed for in the modelling, as set out in **Annexure 10** (assumptions) and is reflected in the stochastic results shown in **Annexure 11**.

2. Other than take-up of the scheme, the cost of administration will depend on a number of additional factors, which will mainly be determined by finer implementation detail and the outcome of DSD negotiations with the various suppliers. To show the sensitivity of the cost to Government, the table below provides two additional sensitivities, being administrative cost in 2020 at [#1] R400/member/annum as well as [#2] R500/member/annum (versus R300).

Table 89: Modelled case: Cost = R300 in 2020

Modelled case: Cost = R300 in 2020	*2020*	*2055*	*2050*	*2065*
Contribution subsidy (R'm)	R220m	R7 603m	R19 345m	R45 475m
Cost of administration (R'm)	R28m	R1 448m	R6 219m	R18 580m
Total cost to Government (R'm)	R247m	R9 051m	R25 564m	R64 055m
Contribution subsidy as % of total cost	***89%***	***84%***	***76%***	***71%***
Scheme administration as % of total cost	***11%***	***16%***	***24%***	***29%***

Table 90: Sensitivity #1: Cost = R400 in 2020

Sensitivity #1: Cost = R400 in 2020	*2020*	*2055*	*2050*	*2065*
Contribution subsidy (R'm)	R220m	R7 603m	R19 345m	R45 475m
Cost of administration (R'm)	R37m	R1 931m	R8 292m	R24 773m
Total cost to Government (R'm)	R257m	R9 534m	R27 637m	R70 248m
Contribution subsidy as % of total cost	***86%***	***80%***	***70%***	***65%***
Scheme administration as % of total cost	***14%***	***20%***	***30%***	***35%***

Table 91: Sensitivity #2: Cost = R500 in 2020

Sensitivity #2: Cost = R500 in 2020	2020	2055	2050	2065
Contribution subsidy (R'm)	R220m	R7 603m	R19 345m	R45 475m
Cost of administration (R'm)	R46m	R2 414m	R10 365m	R30 966m
Total cost to Government (R'm)	R266m	R10 017m	R29 710m	R76 441m
Contribution subsidy as % of total cost	***83%***	***76%***	***65%***	***59%***
Scheme administration as % of total cost	***17%***	***24%***	***35%***	***41%***

Annexure 13: Comparison Against Alternative Designs

This section compares the proposed design with the alternatives set out in **Annexure 9**. This is done in respect of three key results of such any proposed benefit structure, being [a] the resulting replacement rates, [b] the extent of pre-retirement risk benefits and [c] the total cost to Government.

Modelling assumptions and methodology

Table 92: Modeling assumptions and methodology

South African population projected to 2065	The same projections, as set out in **Annexure 10**.
Informal-economy employed population projected to 2065	The same projections, as set out in **Annexure 10**.
Participation in the scheme	While different benefit structures might appeal differently to the potential participants, the same extent of participation, as set out in **Annexure 10**, was assumed for the alternative benefit structures. This allows total cost to Government to be sensibly compared across the alternatives.
Income of participants in the scheme	The same income assumptions and projections, as set out in **Annexure 10**.
Contribution rates for participants in the scheme	Alternative 3 (career average defined benefit) was modelled as per the design. i.e. no contributions below the threshold and 10% contributions above it (up to the earnings ceiling). For the other alternative benefit structures, the same contribution assumptions, as set out in **Annexure 10** were used.
Split of contributions towards risk & savings	In the proposed design, 80% of [own + subsidy] contributions are allocated towards the participant's individual savings, with the balance 20% of contributions going towards the overall risk pool (from which all risk benefits will be paid). For the alternative benefit structures, splits were chosen that would ensure a fair degree of certainty that the risk pool will stay financially sound throughout the period: 1. Alternative 1 (simple defined contribution): 100% of contributions to savings, since the alternative does not provide for any risk benefits. 2. Alternative 2 (defined contribution with risk): 82% of [own + subsidy] contributions to savings, the balance 18% to the risk pool 3. Alternative 3 (career average defined benefit): 77% of [own + subsidy] contributions to savings, the balance 23% to the risk pool 4. Alternative 4 (final salary defined benefit): 80% of [own + subsidy] contributions to savings, the balance 20% to the risk pool
Savings withdrawals Economic assumptions	Same as in **Annexure 10**, no withdrawals assumed.
Risk benefit assumptions	Same underlying mortality and morbidity assumptions as set out in **Annexure 10**. Furthermore, where risk benefits were mentioned, but without detail specification, the same structure, as in the proposed solution, was assumed.
Cost of administration of the scheme	Same per member per month assumption, as set out in **Annexure 10**.

Table 93: Results | Replacement ratios (for retirement at age 60)

	Female	Male	Comment
Proposed design	37%	41%	
Alt 1: Simple defined contribution	23%	25%	38% worse overall than the proposed design, given the absence of Government subsidies
Alt 2: Defined contribution & risk	36%	38%	4% worse overall than the proposed design, mainly due to richer dependents' pensions after retirement
Alt 3: Career average defined benefit	36%	45%	4% better overall than the proposed design, mainly due to increase in Government subsidies

	Female	Male	Comment
Alt 4: Final salary defined benefit	28%	31%	23% worse overall than the proposed design, mainly due to allowance for gaming of the system

Table 94: Results | Capitalised value of pre-retirement risk benefits

R'm, nominal money terms	2020	2035	2050	2065	Comment
Proposed design	18	3 912	9 197	20 395	
Alt 1: Simple defined contribution	1	540	1 285	2 847	86% worse than the proposed design (only return of contributions on death)
Alt 2: Defined contribution & risk	4	3 409	7 959	17 655	13% worse than the proposed design
Alt 3: Career average defined benefit	19	4 103	9 591	21 268	5% better than the proposed design
Alt 4: Final salary defined benefit	18	3 912	9 197	20 395	Similar to the proposed design

Table 95: Results | Total cost to Government (administration + contribution subsidies)

R'm, nominal money terms	2020	2035	2050	2065	Comment
Proposed design	247	9 051	25 564	64 055	
Alt 1: Simple defined contribution	28	1 448	6 219	18 580	78% less than the proposed design; admin only, no subsidies
Alt 2: Defined contribution & risk	247	9 051	25 564	64 055	Similar to the proposed design; same admin same subsidies
Alt 3: Career average defined benefit	332	11 874	32 521	80 357	29% more than the proposed design due to higher subsidies
Alt 4: Final salary defined benefit	247	9 051	25 564	64 055	Similar to the proposed design; same admin same subsidies

Annexure 14: Representative Organisations

The list below sets out the organisations that work together as part of the NEDLAC Task Team on ILO Recommendation 204, which falls jointly under the Ministry of Labour and the ILO Decent Work Country Programme:

- Joburg Informal Traders' Platform (JITP), Johannesburg
- African Reclaimers' Organisation (ARO), Johannesburg
- South African Self-Employed Women's Association (SASEWA), Durban
- Community-based Health Workers' Network, Durban
- South African Informal Traders Association (SAITA), Cape Town
- South African Waste Pickers Association (SAWPA), Sasolburg
- South African Taxi Workers (SATWO, also known as Qina Mshayeli), Durban
- KwaZulu-Natal Fishermen's Forum, Durban
- Home-based workers including care workers, KwaZulu-Natal

Source: WIEGO, Women in Informal Employment: Globalizing & Organizing, a global network focused on securing livelihoods for the working poor, especially women, in the informal economy, www.wiego.org.