

Jansen, Ada; Ngobeni, Winile; Steyn, Wynnona

Working Paper

A reform option for pension fund contribution as tax expenditure in South Africa: A microsimulation model approach using tax administrative data

WIDER Working Paper, No. 2023/139

Provided in Cooperation with:

United Nations University (UNU), World Institute for Development Economics Research (WIDER)

Suggested Citation: Jansen, Ada; Ngobeni, Winile; Steyn, Wynnona (2023) : A reform option for pension fund contribution as tax expenditure in South Africa: A microsimulation model approach using tax administrative data, WIDER Working Paper, No. 2023/139, ISBN 978-92-9267-447-2, The United Nations University World Institute for Development Economics Research (UNU-WIDER), Helsinki,
<https://doi.org/10.35188/UNU-WIDER/2023/447-2>

This Version is available at:

<https://hdl.handle.net/10419/283835>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

WIDER Working Paper 2023/139

A reform option for pension fund contribution as tax expenditure in South Africa

A microsimulation model approach using tax administrative data

Ada Jansen,¹ Winile Ngobeni,² and Wynnona Steyn²

November 2023

Abstract: South Africa has a progressive broad-based personal income tax system with relatively few tax expenditures. The two most important are the medical contribution plus additional tax credits for medical expenses, and the deductions allowed for retirement contributions. A pertinent question for tax reform in South Africa is whether redistributive gains can be achieved by restructuring expenditures in the personal income tax system. This paper considers the redistributive implications of converting the tax deduction for retirement contributions to a tax credit. This would build on the gains achieved by introducing a medical tax credit system in 2012. We analyse the tax revenue gains/losses of income groups and in total in terms of distributional effects and progressivity outcomes using a static microsimulation model based on data for the 2019/20 tax year. We find a high concentration of taxpayers in terms of taxable income and retirement contributions. The concentration of contributions is highly skewed towards lower- and middle-income earners, whose annual contribution amounts are low compared with higher-income earners. We recommend a conversion rate that considers the current distribution of taxpayers contributing to retirement funds. Converting the pension contribution deduction to a tax credit would raise additional revenue and make the tax system more progressive, benefiting low-income earners with marginal tax rates of less than the proposed conversion rate. The revenue gained would provide increased fiscal space to fund social expenditure or reduce government debt. Further distributional and behavioural analyses are needed on low-income earners and those earning below/above the minimum tax threshold, to refine understanding of the impact on low- and middle-income earners' contributions to retirement funds.

Key words: retirement fund contribution, tax expenditure, microsimulation, tax credit

JEL classification: H23, H24

Acknowledgements: We thank UNU-WIDER for supporting the construction of PITMOD as part of the SA-TIED programme, and University of Essex for granting a licence to SASPRI and SARS to use EUROMOD. We acknowledge the European Commission for supporting the development of EUROMOD and SASPRI for assisting Alexius Sithole and the Data Analytics Team reporting to the Chief Revenue Officer at SARS to develop PITMOD. We thank Michael Noble, David McLennan, Helen Barnes, and Katrin Gasior at SASPRI for their contributions during the development of the PITMOD Summary Statistics Tool.

¹ Stellenbosch University, Stellenbosch, South Africa, corresponding author: ada@sun.ac.za; ² South African Revenue Service (SARS), Pretoria, South Africa

This study has been prepared within the UNU-WIDER project [Southern Africa—Towards Inclusive Economic Development \(SA-TIED\)](#).

Copyright © UNU-WIDER 2023

UNU-WIDER employs a fair use policy for reasonable reproduction of UNU-WIDER copyrighted content—such as the reproduction of a table or a figure, and/or text not exceeding 400 words—with due acknowledgement of the original source, without requiring explicit permission from the copyright holder.

Information and requests: publications@wider.unu.edu

ISSN 1798-7237 ISBN 978-92-9267-447-2

<https://doi.org/10.35188/UNU-WIDER/2023/447-2>

Typescript prepared by Luke Finley.

United Nations University World Institute for Development Economics Research provides economic analysis and policy advice with the aim of promoting sustainable and equitable development. The Institute began operations in 1985 in Helsinki, Finland, as the first research and training centre of the United Nations University. Today it is a unique blend of think tank, research institute, and UN agency—providing a range of services from policy advice to governments as well as freely available original research.

The Institute is funded through income from an endowment fund with additional contributions to its work programme from Finland and Sweden, as well as earmarked contributions for specific projects from a variety of donors.

Katajanokanlaituri 6 B, 00160 Helsinki, Finland

The views expressed in this paper are those of the author(s), and do not necessarily reflect the views of the Institute or the United Nations University, nor the programme/project donors.

1 Introduction

Most public finance economists emphasize the role of taxation in generating sufficient revenues to finance government spending, particularly on infrastructure and economic development and on redistributive social spending to protect the poor and vulnerable. When designing or reforming tax systems, fairness and equity are among the key considerations. The fairness of a tax depends on the final burden that the tax places on taxpayers (Hyman 2010). At the same time, a tax system alters the distribution of income before and after tax and therefore brings about net income redistribution effects. However, the efficacy of tax as a redistribution tool has been questioned, particularly in developing countries. Bird and Zolt (2005) argue that personal income tax (PIT) is not effective in reducing inequality given the nature of PIT systems, which are not very comprehensive or sufficiently progressive in developing countries. Furthermore, the authors point to the distortionary effects of tax systems and propose the use of the direct expenditure side of the budget for redistributive purposes. Despite these arguments, the PIT system is generally perceived as an effective tool for redistributing income to achieve vertical equity objectives. Empirical evidence reveals that PIT systems tend to be progressive and have an impact on reducing inequality (Duncan and Peter 2016; Gerber et al. 2018).

In some instances, though, the initial design of PIT tax expenditures does not necessarily provide optimal distributional gains. One such example is the previous medical tax deductions in the South African tax system, which disproportionately benefited higher-income groups. South Africa is a high-middle-income country that continues to experience stagnant growth and high levels of inequality and poverty, resulting in high levels of unemployment, with individuals unable to participate in the formal economy and a shrinking middle-income class (Bhorat et al. 2014; Saba and Coetzee 2018). The country has a progressive broad-based PIT system, with relatively few tax expenditures. The two most important tax expenditures are the medical contribution plus additional tax credits for medical expenses, and the deductions allowed for retirement contributions. The medical tax credits were converted in 2012 from a deduction to a tax credit. An investigation into the distributional effects of this tax reform revealed that the core medical tax credit improved distributional outcomes, but this was not the case for additional medical expenditures (Nhamo and Mudimo 2020).

A pertinent question for tax reform in South Africa is whether redistributive gains are possible by restructuring tax expenditures of the PIT system to improve equity outcomes. Transforming tax systems, however, needs to be considered in a specific country context, assessing revenue mobilization outcomes and equity objectives while also considering the country's existing economic structure and stage of development. Structural features of the PIT system to be considered include tax expenditures, the taxable income base, and the distribution of taxpayers, all of which should be assessed in terms of inclusive growth principles and goals (Abdel-Kader and De Mooij 2020; Brys et al. 2016).

One specific tax expenditure that has received increased attention from South African policy-makers in recent times is the retirement contributions tax deduction. This type of tax expenditure is specifically implemented to encourage retirement savings (Toder et al. 2020). A study by Redonda and Axelson (2021) is the only recent empirical research to consider pension fund reforms that were implemented by the South African government in 2016 to improve retirement savings and increase the fairness of the pension system. Their main finding was that these reforms did not alter the distributional outcome of this tax expenditure.

This paper aims to use South Africa as a case study and consider how the PIT system can be reformed to improve equity outcomes by simulating specific tax credit policy reform options as a substitute for the deduction of retirement contributions. The main analysis involves converting the retirement contribution deduction to a tax credit to improve the equity objectives of this tax expenditure for inclusive growth purposes.¹ The research objectives include:

- to analyse the existing PIT system, with a focus on retirement contribution deductions in terms of tax revenue foregone and distributional equity implications;
- to consider tax policy reforms to convert retirement contribution deductions to a tax credit, by analysing the outcome in terms of tax revenue mobilization and distributional equity implications.

The empirical analysis in this paper uses a static microsimulation model. The model, called PITMOD, uses the EUROMOD (tax-benefit microsimulation model) platform but is underpinned by tax administration data rather than survey data.² PITMOD is, therefore, a static microsimulation model developed using anonymized South African PIT administration data obtained from SARS. The PIT system of South Africa for the 2019/20 tax year serves as the base case study to examine structural reform options for retirement contribution tax incentives. The distribution of registered individuals with income below and above the minimum tax thresholds is included in the analysis.

2 The rationale for pension saving and tax incentives

Income security is an important motivation to contribute to retirement funds. Income and wealth fluctuate over an individual's lifetime, necessitating saving income that can be drawn on, particularly after retirement. Such savings allow the individual to smooth income over their lifetime (Hardcastle 2012: 3). According to Barr and Diamond (2006: 16), pension contributions (such as retirement annuities) can be used as an insurance tool to guard against the uncertainty an individual faces regarding how long after retirement they will live. Despite the benefits to income security of pension contributions, retirement savings, particularly in developing countries, receive less priority than other elements of household budgets for several reasons—with affordability due to high unemployment and inequality at the forefront of these explanations.

Governments have generally opted to use special tax arrangements to incentivize savings towards retirement (Attanasio et al. 2004). Several tax policy options can be used for this purpose. A tax deduction reduces the taxable income of the individual, given the option that pension contributions can be fully or partially deducted by the taxpayer (OECD 2016: 47). This differs from a tax credit, which reduces the tax liability of a taxpayer at a certain conversion rate. Other options include government subsidies or matching contributions, where the former is explained as refundable tax credits made towards a pension account (OECD 2016: 47). Statistics on tax incentives used in Organisation for Economic Co-operation and Development (OECD) countries

¹ The research project has received conditional ethical clearance from Stellenbosch University, Project ID: 25736.

² Refer to the South African Revenue Service (SARS) PITMOD version 3.1 developed in conjunction with SASPRI (Southern African Social Policy Research Insights) and funded by UNU-WIDER as part of the SA-TIED programme workstream 2 on public revenue mobilization for inclusive development. For further information on PITMOD and a comparison with a survey-based simulation model, see Steyn et al. (2021).

reveal that most countries provide an incentive and place limits on tax deductibility (Whitehouse 1999: 7).

A pertinent question is whether tax incentives are appropriate mechanisms to encourage contributions towards retirement, given their costly nature in terms of foregone tax revenue and possible avoidance of taxation, as well as the distributional implications given that higher-income groups are more likely to claim them (Whitehouse 1999: 1). The existing literature on the impact of tax incentives on total retirement savings is mixed. Theoretically, the impact of tax incentives on savings behaviour is that higher returns on savings will encourage people to save more (the substitution effect), whereas the income effect would bring about less saving, since achieving wealth targets is now less onerous (Fadejeva and Tkacevs 2022). Some empirical studies show that tax incentives do not increase new savings. One study supporting this finding is Attanasio et al. (2004), which considers tax-favoured savings schemes in the US and UK and finds that only a small fraction of new savings resulted from these incentives. Chetty et al. (2014) investigate the impact of subsidies for pension contributions and an automatic contribution policy on savings in Denmark. They find that a decrease in subsidies on capital pensions (paid out as a lump sum on retirement) reduces the contributions of those in the top income tax bracket. However, only a small proportion of contributors (19 per cent) drove this reduction. Furthermore, nearly all of the reduced savings in tax-favoured pension schemes were substituted with other savings. This is supported by the work of Ayuso et al. (2019), who investigate the impact of tax incentives on retirement in Spain and find limited new savings resulting from tax incentives for retirement savings.

Fadejeva and Tkacevs (2022) point out that tax incentives increase total private savings only if individuals reduce consumption instead of changing the composition of their savings basket. They consider the impact of tax advantages in Latvia, in which one of the components of the pension system is a tax-favoured pension scheme. Using household data on financial and real assets, liabilities, and income contributions, as well as demographic information on the reference person in the household, they estimate the impact of tax-favoured savings on non-tax-favoured savings and find that tax incentives are not associated with lower consumption (which would have indicated an increase in total savings). Despite evidence that tax incentives increase pension savings (as a result of the substitution from other non-tax-favoured forms of saving), O'Brien (2023), in a study considering the responsiveness of private pension savings to tax incentives in England and Wales, estimates very low intensive- and extensive-margin elasticities for employees. Using kinks in the income tax schedule, he estimates an intensive-margin elasticity of approximately -0.01 and an extensive-margin elasticity of -0.05 . O'Brien (2023) therefore provides evidence that an increase in the tax incentive results in marginal increases in pension savings. In contrast, Chan et al. (2022) show that when analysing retirement savings' responses to tax incentives, it is imperative to consider the income responses to these policy initiatives (which may have been given less attention in earlier literature). Their findings reveal that higher contribution caps affect the labour supply responses of high-income earners significantly, which results in higher tax revenues, offsetting fiscal losses from the additional tax concessions.

3 Retirement savings in South Africa and tax incentives

One challenge of the broad social security system in South Africa is the significant gaps that exist in providing retirement benefits for all workers. In August 2021, the Department of Social Development gazetted a Green Paper in which a key gap identified was the absence of a mandatory system for social security provision for all workers, leaving millions of workers with inadequate coverage as they are unable to access coverage in the private sector due to affordability and the

structural complexity of the system (Department of Social Development 2021).³ Proposals to address this gap include the introduction of mandatory retirement, death, and disability insurance for all workers, to be provided through a public fund called the National Social Security Fund (NSSF) and guided operationally by the principles of social solidarity and risk pooling (Department of Social Development 2021).

3.1 The direct approach: government-provided social welfare system

The South African government offers social grants fully funded by the state. These grants are crucial for the livelihood of many people and act as a safety net for those who are unable to work. They are issued using a targeted approach, the beneficiaries primarily those identified as vulnerable (which includes older people, disabled people, and children) (ISS 2008). The social assistance offered by the government is extensive: in 2018, almost one-third of the South African population received a grant, with old-age pensions awarded to approximately 3.4 million beneficiaries (Calitz et al. 2019). Beneficiaries of these grants must comply with certain requirements, such as being 60 years of age or older, not receiving other grants from the state, and meeting the requirements of a means test. A maximum of ZAR1,800 per month per beneficiary was awarded in 2019/20. Close to ZAR77 billion was distributed in old-age grants in 2019/20, benefiting 3.7 million persons aged 60 years and older (National Treasury 2019).

Empirical evidence supports the notion that the old-age grant in South Africa has positive externalities for vulnerable and poor households. Waidler and Devereux (2018) evaluate social grants in South Africa to ascertain the extent to which these grants improve wellbeing, with a specific focus on food security and nutrition outcomes. Their findings show that old-age grants have a positive influence on the dietary diversity index, but the results are insignificant concerning nutrition. Kollamparambil and Etinzock (2019) also find that the old-age grant has an overall positive impact on wellbeing, specifically for female recipients. Despite these positive outcomes, given the ongoing fiscal constraints faced by the South African government, stagnant real economic growth, and structurally high levels of unemployment, it is imperative that the working population provide sufficient income for their retirement years by increasing savings. Low- to middle-income earners, particularly, have insufficient personal savings for retirement. It is therefore imperative to consider whether the current retirement contribution tax incentives are appropriately focused on improving the retirement savings of those individuals who are most likely to depend on the government for social old-age grants when they do retire.

3.2 The indirect approach: tax deductions for contributions to retirement benefits

Contributions to pension schemes or retirement annuities form a substantial component of total savings and accumulated wealth in South Africa. According to Orthofer et al. (2019), pension assets form a substantial component of wealth in South Africa; this is not unexpected given the nature of the domestic pension system (capitalized and privately administered). The 2016 South African tax retirement incentive reforms were primarily geared towards encouraging increased retirement savings and preservation of savings, as well as improving the fairness of the system and simplifying it (National Treasury 2014: 48; SARS 2016). These changes provided additional relief

³ A Green Paper is a government policy discussion paper detailing specific issues and outlining possible legislative and policy response options under consideration by government. It precedes a White Paper (which articulates a government policy position that has received Cabinet approval) (Republic of South Africa 2020). The Department of Social Development announced on 1 September 2021 that the Green Paper on Comprehensive Social Security and Retirement Reforms had been withdrawn to allow for improved clarification on some matters in the paper (Republic of South Africa 2021).

to most retirement fund members and incentivized retirement savings. The employee's retirement contributions (including all contributions by the employee and employers) can be deducted but are limited. Two important changes were made to retirement contributions (which include pension, provident, and retirement annuity contributions):

- deductions now include provident fund contributions;
- the contribution made by the employer is now a taxable fringe benefit for the employee.

The allowable tax deduction is the lesser of the following options:

- ZAR350,000, or 27.5 per cent of remuneration, whichever is greater (excluding retirement lump sum benefits, withdrawal lump sum benefits, and severance benefits); or
- taxable income (including passive income and taxable capital gains), but excluding retirement lump sum benefits, withdrawal lump sum benefits, and severance benefits and before any Section 11F and Section 18A deduction.⁴ (SARS n.d. 2: 90)

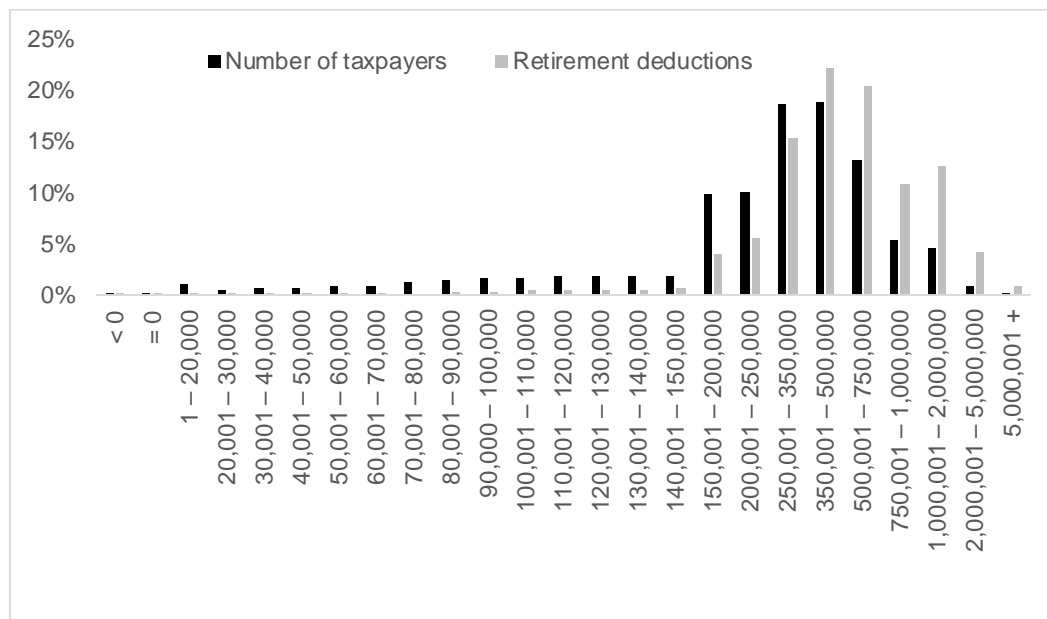
The extent of the incentive to save for retirement is evident in the current distribution of retirement fund contribution deductions by registered personal income taxpayers and the total tax expenditure amount. One of the main arguments in favour of tax expenditures such as medical tax credits and deductions for contributions to pension funds is that they subsidize expenses such as medical aid contributions and incentivize savings for retirement. The policy objective of allowing retirement contribution deductions against income is to incentivize income earners to make provision for income after retirement and to reduce dependence on the government social security pension grant. However, in a very unequal society such as South Africa the fairness of the system may be affected when deductions disproportionately accrue to higher-income households (Abdel-Kader and De Mooij 2020). It may therefore be beneficial to reform tax expenditures to improve the progressivity of the tax system while at the same time attempting to incentivize those who do not contribute, or who do so insufficiently, towards retirement savings. Some studies have found, though, that removing tax expenditures marginally reduces the progressivity of tax systems (López-Laborda et al. 2022).

In the 2019/20 tax year, retirement fund contribution tax deductions were claimed by 7.03 million taxpayers and represented the highest tax deduction amount claimed, amounting to approximately ZAR275 billion. This amount is close to 76 per cent of total tax deductions, or 10.1 per cent of total taxable income. The tax expenditure cost was ZAR91.7 billion, or 16.9 per cent of total final tax liability. Approximately 48 per cent of taxpayers with taxable income contributed towards a retirement fund. The average retirement fund contribution amount deducted was ZAR39,121 per year, with the median value at ZAR21,158 per year. The variance between these two values is an indication of the concentration of deductions due to the unequal distribution of personal income taxpayers, which may be ascribed to many salaried employees not receiving employer-compulsory retirement contributions or lower-income employees being unable to provide for their retirement. The average deduction by personal income taxpayers declaring taxable income of above ZAR1.5 million per year was ZAR175,193 per year. The benefit of a tax deduction at a marginal tax rate of 45 per cent is high compared with the benefit for taxpayers who contribute closer to the average retirement contribution deduction at a marginal tax rate of 26 per cent.

⁴ Section 11F of the Income Tax Act No. 58 of 1962 specifies that taxpayers can deduct contributions to provident and pension funds and retirement annuities contributions from their taxable income. Section 18A deductions are donations to approved institutions.

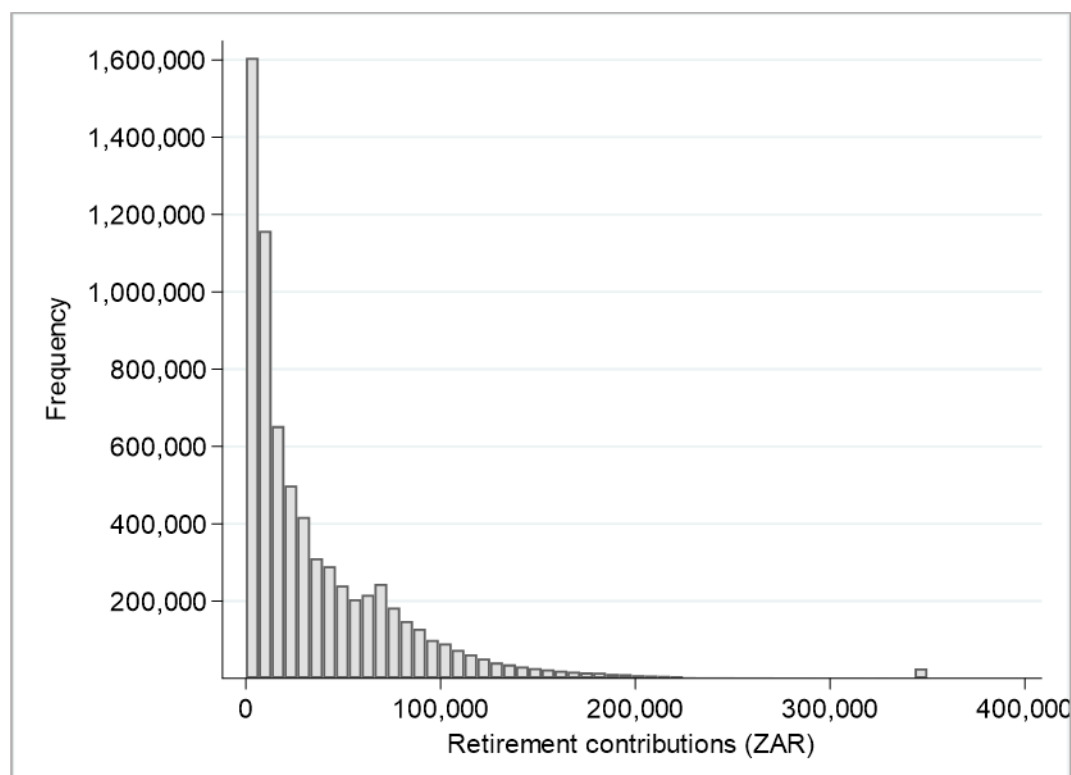
Figure 1 shows the percentage distribution of assessed taxpayers and contributions to retirement funds by income group using data from the *Tax Statistics* publication (National Treasury and SARS 2023). It reveals that for income up to the ZAR150,000 taxable income per year a small number of individuals were contributing relatively small amounts, with noticeable increases thereafter. The highest percentage contributions in terms of the number of taxpayers and their respective pension contributions were evident in the ZARR250,000–750,000 taxable income groups. Taxpayers taxed at the top marginal rate (of 45 per cent) who contributed to retirement funds represented just over 1 per cent of the total number of individuals making contributions to retirement funds, with a contribution share of less than 5 per cent. Figures 2 and 3 support these findings. Drawn from the tax administrative data underpinning PITMOD, Figure 2 reveals that there were a large number of taxpayers contributing small annual amounts to retirement, while very few taxpayers made large annual contributions.

Figure 1: Number of taxpayers and retirement contributions by income group for the 2020 tax year



Source: authors' illustration based on National Treasury and SARS (n.d. 1).

Figure 2: Frequency of retirement contributions

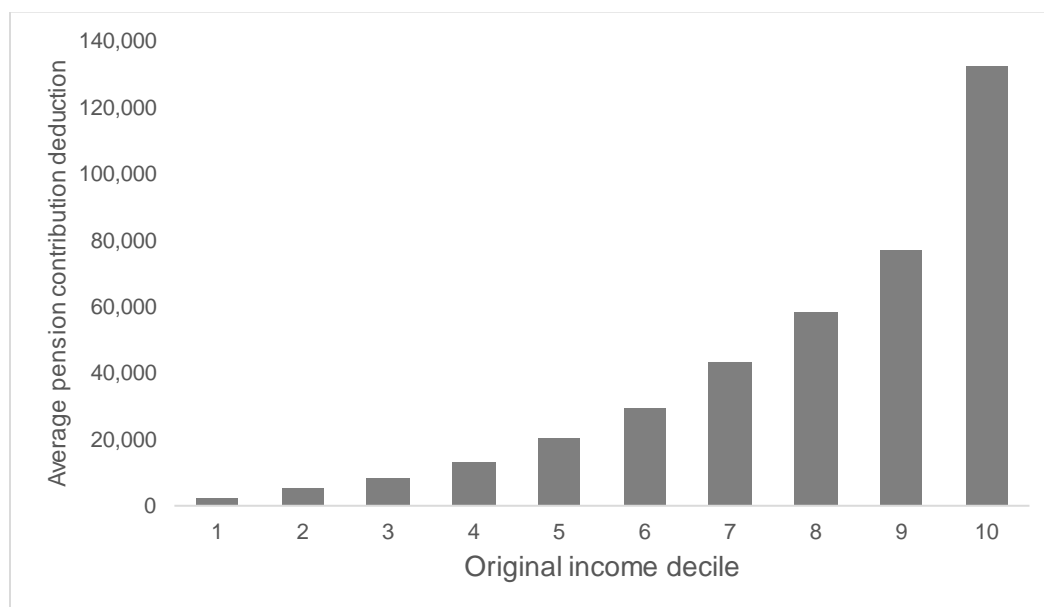


Source: authors' illustration based on PITMOD output.

The retirement contribution tax expenditure incentive benefits higher-income taxpayers, who are financially able to save larger amounts towards retirement. Lower-income individuals, who are most at risk of becoming dependent on old-age social pension benefits, are more limited in terms of numbers and retirement contribution shares. In addition, these statistics indicate that, despite the top-income earners contributing on average disproportionately more to retirement funds (see Figure 3), these taxpayers are not maximizing the tax benefit possible under the current tax retirement contribution incentive (which allows a maximum of ZARR350,000 per year to be deducted at the maximum 45 per cent marginal tax rate).

To the extent that the possible reform options reduce the tax deduction benefit, it is questionable whether the behavioural responsiveness would be large given the current savings behaviour of higher-income earners. The literature also points to mixed results on the impact of tax incentives on saving behaviour. Section 4 reports the results of reform options analysed using a static microsimulation model, considering both distributional and tax revenue implications. The Appendix (Tables A1 to A9) contains the simulated results of PITMOD for the 2020 tax year.

Figure 3: Average retirement contribution deduction by original income deciles



Source: authors' illustration based on PITMOD output.

4 Reform scenarios for tax incentives for retirement savings in South Africa

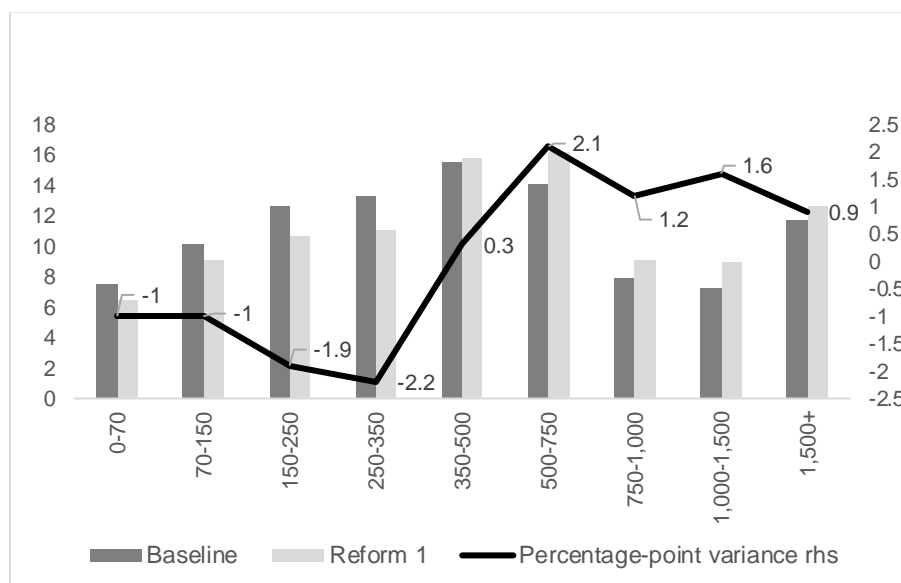
The simulated outcomes of the reform scenarios depend on the structural changes to the tax system given the reform considered (such as a tax credit instead of a deduction), as well as the distribution of taxpayers across income and the distribution of taxpayers contributing to retirement funds.

4.1 Reform scenario 1: abolishment of the retirement contribution tax deduction

The first reform scenario simulates the abolishment of tax deductions allowed for retirement contributions. The outcome is assessed in relation to tax revenue gains and impact on the progressivity of the PIT system. The significance of a tax deduction for retirement contributions and the distribution of the tax expenditure benefit for taxpayers are evident in this first reform scenario.

There is an upward shift of taxpayers on the taxable income scale, given that the taxable income of individuals who were below the minimum tax threshold, due to the deduction of retirement contributions, increases to above the minimum tax threshold. Likewise, some taxpayers in the first and second income tax brackets move up to the next income tax bracket. The number of taxpayers in the first two income brackets decreases by 385,200, or by 1.8 percentage points for the first income bracket and 0.7 percentage points for the second income bracket. The size of the sixth income tax bracket increases the most, namely by 134,800 taxpayers, or 0.9 percentage points. The number of taxpayers in the last income bracket increases the least, namely by 25,400 taxpayers, or 0.2 percentage points. Taxable income increases by ZAR274.8 billion, from ZAR2.7 trillion to ZAR3.0 trillion. The taxable income of taxpayers in the ZAR500,000–750,000 income group is simulated to increase the most, namely by close to ZAR102.6 billion, or 2.1 percentage points, and the increase in taxable income equals 37.3 per cent of the total increase in taxable income (see Figure 4).

Figure 4: Percentage-point difference in taxable income: baseline versus reform scenario 1



Note: the horizontal axis shows taxable income in thousand ZAR; rhs = right hand side.

Source: authors' illustration based on PITMOD output.

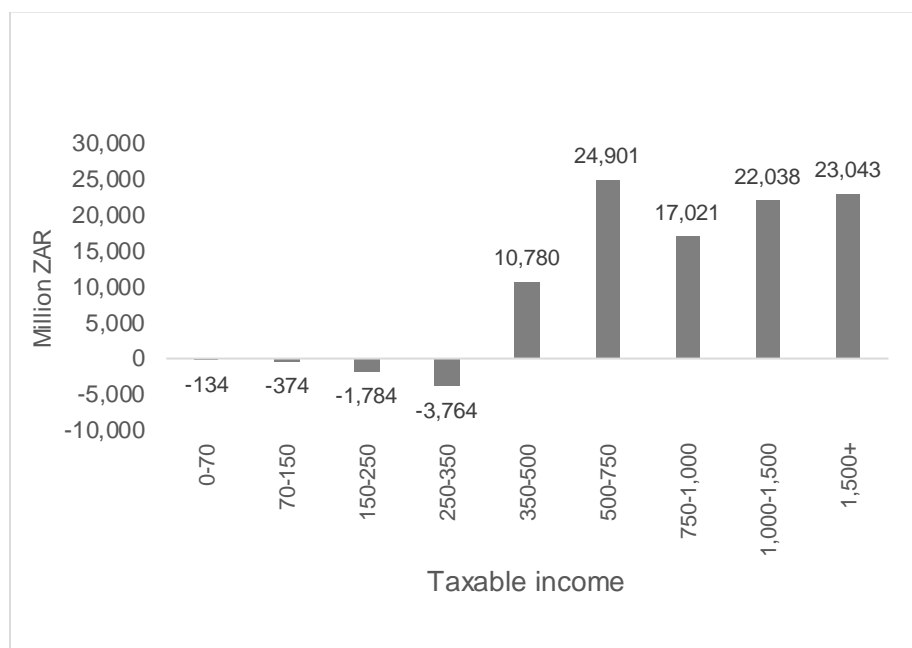
The significance of contributions to retirement funds by lower- and middle-income taxpayers is profound given the higher number of taxpayers in those income brackets, as well as the higher number of taxpayers in those brackets contributing to retirement funds. The number of taxpayers with taxable income of below ZAR500,000 per year accounts for 42 per cent of the total increase in taxable income.

The tax liability for taxpayers with taxable income of above ZAR350,000 increases, with the highest increase recorded in the ZAR500,000–750 000 taxable income group (see Figure 5). The final tax liability increases by ZAR91.7 billion, to ZAR634.6 billion, or by 16.9 per cent. The number of taxpayers with a final tax liability is simulated to increase by 3.3 per cent, from 7.2 to 7.5 million taxpayers, compared with the counterfactual base case scenario.

The average rate of tax⁵ increases from 19.9 per cent to 21.1 per cent (1.2 percentage points) and the effective tax rate from 17.5 per cent to 20.5 per cent (3.0 percentage points) (see Figure 6). The effective tax rates increase across the income tax brackets, but the highest increase is in the R350 000 to R1 million per year taxable income group, which evidences the widespread contributions to retirement funds across income bands.

⁵ PITMOD calculates average tax rates as the share of tax liability to taxable income (income after exemptions and deductions). Effective tax rates are calculated as the share of tax liability to gross income before exemptions and deductions.

Figure 5: Variance in tax liability (million ZAR change): baseline versus reform scenario 1

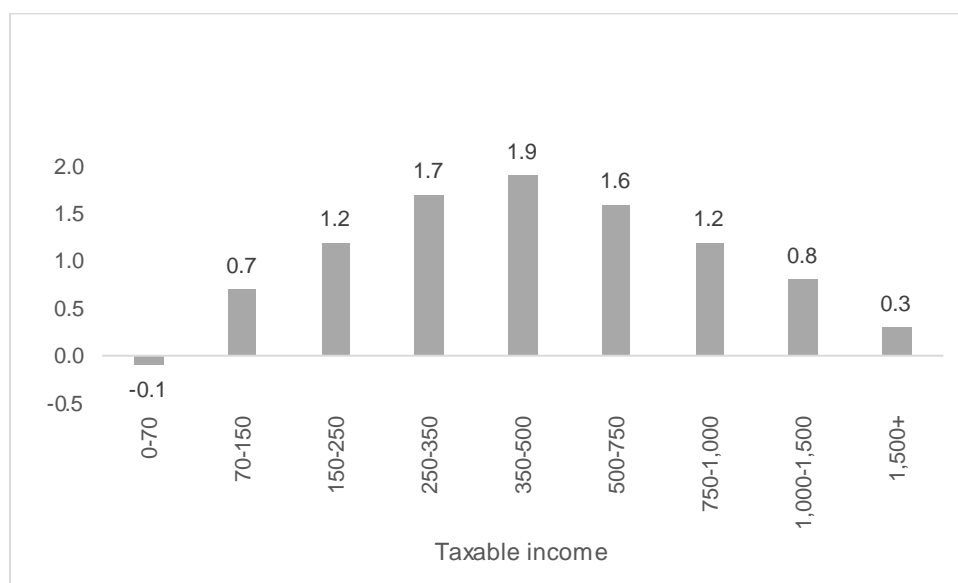


Note: the horizontal axis shows taxable income in thousand ZAR.

Source: authors' illustration based on PITMOD output.

In terms of the Gini coefficient, taxable income becomes more unequal by 0.8 percentage points, from 64.4 per cent to 65.2 per cent, and the final tax liability becomes less unequal, reducing from 85.2 per cent to 84.4 per cent, or -0.8 percentage points. Total net income is more equal, at 61.1 per cent compared with 61.8 per cent before the reform scenario. Thus, the tax system becomes less progressive with the removal of retirement contribution deductions due to the less unequal distribution of tax liability. This is due to the higher concentration of taxpayers and their contributions to retirement funds in the ZAR350,000–750,000 taxable income groups.

Figure 6: Percentage-point difference in average tax rates between baseline and reform scenario 1



Note: the horizontal axis shows taxable income in thousand ZAR.

Source: authors' illustration based on PITMOD output.

In terms of the Gini coefficient, taxable income becomes more unequal by 0.8 percentage points, from 64.4 per cent to 65.2 per cent, and the final tax liability becomes less unequal, reducing from 85.2 per cent to 84.4 per cent, or -0.8 percentage points. Total net income is more equal, at 61.1 per cent compared with 61.8 per cent before the reform scenario. Thus, the tax system becomes less progressive with the removal of retirement contribution deductions due to the less unequal distribution of tax liability. This is due to the higher concentration of taxpayers and their contributions to retirement funds in the ZAR350,000–750,000 taxable income groups.

4.2 Reform scenario 2: conversion of retirement contribution tax deductions to tax credits

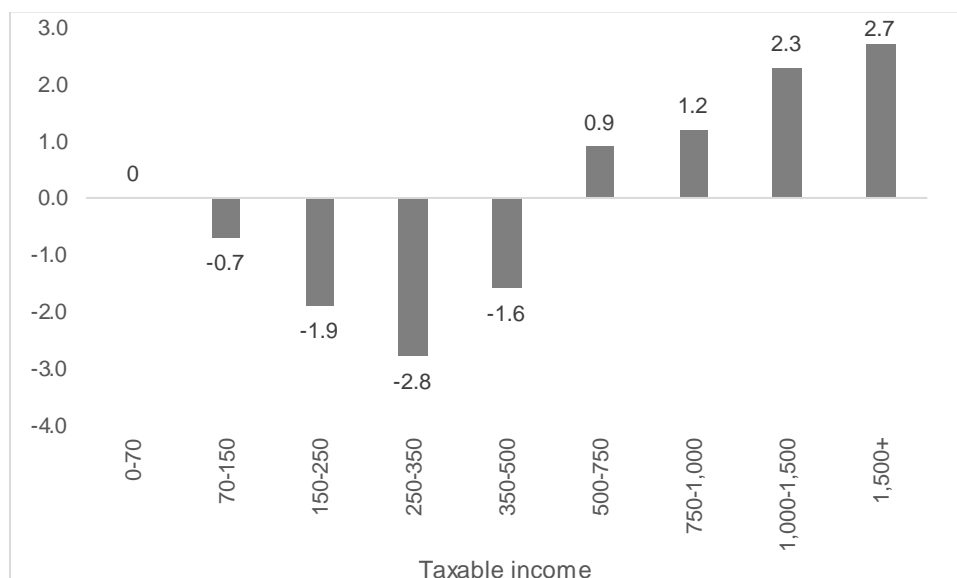
The second reform scenario introduces a retirement contribution credit in lieu of the retirement contribution deduction, at the same maximum tax legislation rate of 27.5 per cent and a tax revenue monetary limit of ZAR350,000 as in the case of the baseline (i.e., the tax deduction). The difference between the retirement contribution deduction and the tax credit is that the deduction is made against taxable income at the applicable marginal tax rate, while the tax credit is deducted against tax liability at the applicable conversion rate.

Reform scenario 2.1: Revenue-neutral scenario at a conversion rate of 35 per cent

This scenario simulates the conversion of the retirement contribution deduction to a tax credit at a rate of 35 per cent to analyse the distributional impact of a tax-revenue-neutral reform option. The distributional impact on tax liability and net income are analysed against the base case scenario of the 2019/20 tax year retirement contribution deductions. At a revenue-neutral 35 per cent conversion rate, all taxpayers contributing to a retirement fund and taxed at marginal tax rates of 18 per cent, 26 per cent, and 31 per cent benefit from the higher tax credit rate incentive as a result of paying less tax.

In aggregate, a tax-revenue-neutral reform scenario benefits taxpayers with taxable income of less than ZAR500,000 per year. The tax liabilities of taxpayers with income of above the maximum income threshold of ZAR1.5 million per year increase the most, namely by 2.7 percentage points. Taxpayers in the ZAR250,000–350,000 income group benefit the most, with a simulated decrease in their tax liability of 2.8 percentage points (see Figure 7). On average, the net income of all taxable income groups is simulated to be less after the reform. The tax liability Gini coefficient in this reform scenario increases by 0.8 percentage points to 86.0, indicating an increase in the progressivity of the tax system.

Figure 7: Percentage-point difference in tax liability between baseline and reform scenario 2.1



Note: the horizontal axis shows taxable income in thousand ZAR.

Source: authors' illustration based on PITMOD output.

Reform scenario 2.2: Average-deduction-allowed scenario at a conversion rate of 26 per cent

The second reform scenario introduces a retirement fund contribution credit at a conversion rate of 26 per cent; this rate is the marginal tax rate for taxable income of ZAR195,850–305,850 per year (the second income bracket) and is based on the average deduction allowed for retirement fund contributions. The revenue gains and distribution of taxable income and tax liability are analysed against the baseline scenario of the 2019/20 tax year retirement contribution deductions (Appendix Table A10 contains the 2019/20 tax year income tax schedule).

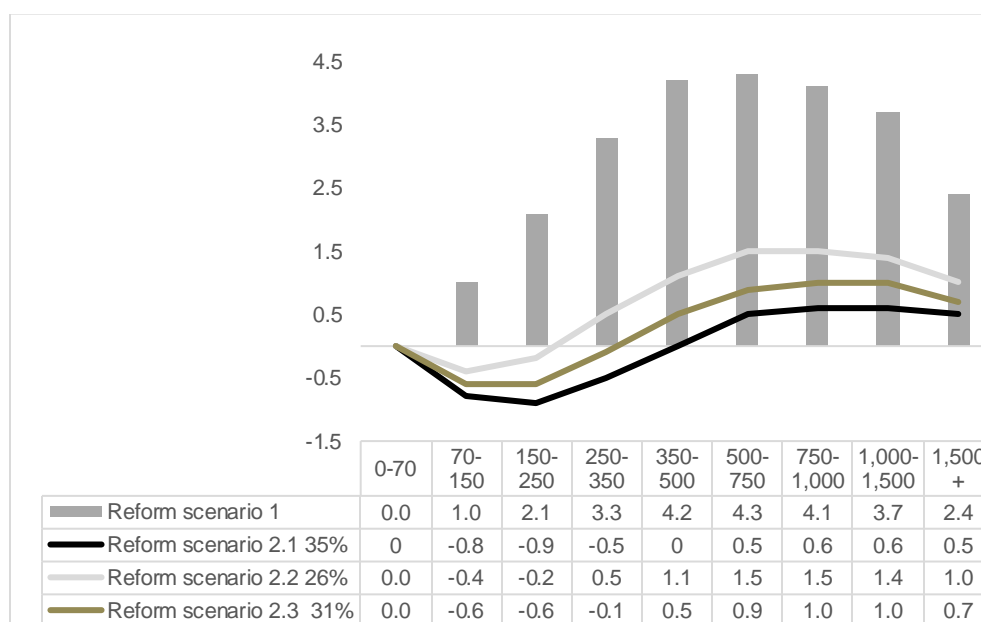
At a conversion rate of 26 per cent, total taxable income increases by ZAR274.8 billion and final tax liability by ZAR22.7 billion, or 4.2 per cent. The total number of taxpayers with a final tax liability reduces by 107,400, or 1.5 per cent. This stems from the fact that taxpayers claiming a deduction for retirement contributions at a marginal tax rate of 18 per cent benefit from this reform scenario as their final tax liabilities are reduced. Most of the increase in average tax liability is borne by taxpayers earning more than ZAR1 million taxable income per year, with a marginal tax rate of 41 per cent, and those with taxable income of above ZAR1.5 million per year, who are taxed at the 45 per cent marginal tax rate. The increase in average tax liability for taxpayers with taxable income of above ZAR1 million per year is ZAR19,156, or 4.9 per cent; for those with taxable income of above ZAR1.5 million per year, the increase is ZAR33,358, or 2.9 per cent. In this reform scenario the PIT system becomes more progressive, with an increase in the Gini coefficient for final tax liability of 0.3 percentage points, from 85.2 to 85.5.

Reform scenario 2.3: Average-deduction-allowed scenario at a conversion rate of 31 per cent

The tax credit reform scenario was also simulated at a conversion rate of 31 per cent (the marginal tax rate of the third income tax bracket), compared with 2019/20 tax year retirement contribution deductions. Total taxable income increases by a similar ZAR274.8 billion, but final tax liability increases by only ZAR9.5 billion due to more taxpayers benefiting from the higher conversion rate. The total number of taxpayers with a final tax liability reduces by 180,300, or 2.5 per cent, as taxpayers claiming a deduction for retirement contributions at a marginal rate of 18 per cent and 26 per cent benefit in this reform scenario, which reduces their final tax liability.

The average tax liability of taxpayers with taxable income of less than ZAR350,000 per year is reduced. Compared with the baseline, the average effective tax rate increases by 0.3 percentage points, to 17.9 per cent. The Gini coefficient for final tax liability in this reform scenario increases by 0.6 basis points to 85.8 per cent, suggesting a greater increase in the progressivity of the PIT system than in the 26 per cent conversion rate scenario (see Figure 8).

Figure 8: Effective rate of tax across income groups (percentage-point difference to baseline)



Note: the horizontal axis shows taxable income in thousand ZAR.

Source: authors' illustration based on PITMOD output.

These tax credit reform scenarios result in a tax liability ratio of 40:60 between female and male taxpayers. The average tax liability of taxpayers aged between 35 years and the retirement age of 65 increases in the conversion rate credit reform scenarios. However, in the 31 per cent conversion rate reform scenario, the average tax liability of taxpayers aged 45–65 increases by more than it does in the 26 per cent conversion rate reform scenario.

The tax credit reform scenario at a conversion rate of 26 per cent simulates an effective tax rate increase of 0.7 percentage points for women, slightly less than the 0.8 percentage-point increase for men. The average tax liability for women increases by 4.8 per cent, against the 4.0 per cent increase for men. The 31 per cent conversion tax credit reform scenario simulates an effective tax rate increase of 0.3 percentage points for both women and men. The average tax liability for women and men increases equally by 1.8 per cent. This implies that women who contribute to retirement funds are more concentrated in the third income bracket, at taxable incomes of ZAR305,851–423,300.

5 Summary and policy implications

The government's indirect approach to incentivizing provision for old age, by allowing a tax deduction for retirement contributions, is costly in terms of simulated tax revenue foregone of ZAR91.7 billion, or close to 17 per cent of total tax liability for the 2019/20 tax year. It is also imperative to point out that a tax deduction benefits higher-income earners, who are taxed at higher marginal tax rates.

In a country with insufficient savings for retirement, especially at the lower end of the income distribution, the current tax deduction incentive scheme provides higher tax benefits to higher-income taxpayers earning income that is taxed at higher marginal tax rates. It is therefore debatable whether such relatively high-revenue-cost tax expenditure is justifiable if the goal is to ensure that more people strive towards self-sufficient income after retirement. Higher-income earners are significant contributors to retirement savings in South Africa. However, the full tax retirement benefit deduction available on an annual basis is not utilized by these income earners, or by lower-income earners. This is primarily due to affordability, contribution limits on employer-provided funds, and the allocation of investment assets by high-income earners.

The empirical literature provides mixed evidence on the behavioural responses of individuals to changes in tax incentive schemes. High-income earners can contribute more significantly to total savings in the economy, and do so, with many asset allocation options available. Furthermore, high-income earners are not likely to become dependent on government social grants after retirement. The tax expenditure incentive aims mainly to increase the number of contributors and the amounts saved by income earners, and to lessen the burden on government to provide old-age grants. This aligns with the needs identified by the UK's HM Treasury to boost the savings of the less wealthy (Hardcastle 2012).

In this paper, the conversion of the retirement contribution deduction to a tax credit was simulated at three conversion rates. These rates simulate a neutral tax revenue scenario (35 per cent), plus two scenarios based on the marginal tax rates for the second income bracket (26 per cent) and the third income bracket (31 per cent) considering the average retirement contribution amount claimed by taxpayers in these brackets. Given the concentration of taxpayers in the distribution of taxpayers and the distribution of taxpayers contributing to pension funds, the mobilization of tax revenue achieved by switching to a tax credit system is more effective at the 26 per cent conversion rate, with a net revenue outcome of ZAR22.7 billion, or an increase in tax revenue of 4.2 per cent. The 31 per cent conversion rate yields lower additional tax revenue of ZAR9.5 billion, as more taxpayers benefit from the higher conversion rate.

However, the PIT system is more progressive under the 31 per cent conversion rate scenario compared with the 26 per cent conversion rate scenario. Taxpayers above the minimum tax threshold and taxed at a marginal tax rate of 18 per cent benefit the most, with a 2.5 per cent reduction in the number of taxpayers at the 31 per cent rate compared with a 1.5 per cent reduction in taxpayers at the 26 per cent rate.

Policy reform options aimed at mobilizing tax revenue for a more comprehensive socially secure direct system should consider a 26 per cent conversion tax credit system that will protect low-income earners from an increase in their tax liabilities and reduce the tax liabilities of low-income earners contributing to retirement funds taxed at the 18 per cent marginal tax rate.

Given the minute distributional variation between the outcomes of the 26 per cent and the 31 per cent conversion rates, it is recommended that a lower conversion rate be considered. The

distribution of taxpayers who contribute to retirement funds is highly skewed towards lower- and middle-income earners with relatively low annual contribution amounts, compared with the higher average amounts contributed by high-income earners. The total tax revenue gained at a conversion rate of 26 per cent would provide an additional benefit to old-age grant recipients of ZAR518 per month (an increase of close to 29 per cent).

The average contribution to retirement funds is far lower than the average contributions made by high-income earners, evidencing the lower contribution rate of low- to middle-income earners. It is recommended that further distributional analyses be undertaken on low-income earners and those earning above the minimum tax threshold to refine the impact analysis on low-income earners contributing to retirement funds. Studies have shown that tax advantage savings instruments are expensive ways of encouraging savings, since few new savings are generated (Attanasio et al. 2004). These policies have a distributional impact due to the ability of higher-income individuals to reshuffle the allocation of their assets (Fadejeva and Tkacevs 2022).

Further analyses could include the use of the SAMOD simulation model (which includes the South African social assistance benefit system) to simulate the distributional implications of increased social assistance grants funded from the simulated increase in tax revenues.

References

- Abdel-Kader, K., and R.A. De Mooij (2020). 'Tax Policy and Inclusive Growth'. IMF Working Paper 20/271. Washington, DC: International Monetary Fund (IMF). Available at: www.imf.org/en/Publications/WP/Issues/2020/12/04/Tax-Policy-and-Inclusive-Growth-49902 (accessed 29 June 2022). <https://doi.org/10.5089/9781513561561.001>
- Attanasio, O.P., J. Banks, and M. Wakefield (2004). 'Effectiveness of Tax Incentives to Boost (Retirement) Saving: Theoretical Motivation and Empirical Evidence'. *Economic Studies* 39, 2004/2. Paris: OECD. <https://doi.org/10.1920/wp.ifs.2004.0433>
- Ayuso, J., J.F. Jimeno, and E. Villanueva (2019). 'The Effects of the Introduction of Tax Incentives on Retirement Saving'. *SERIEs*, 10: 211–49. <https://doi.org/10.1007/s13209-019-0195-7>
- Barr, N., and P. Diamond (2006). 'The Economics of Pensions'. *Oxford Review of Economic Policy*, 22(1): 15–39. <https://doi.org/10.1093/oxrep/grj002>
- Bird, R., and E.M. Zolt (2005). 'Redistribution Via Taxation: The Limited Role of the Personal Income Tax in Developing Countries'. *UCLA Law Review*, 52: 1627–95.
- Bhorat, H., A. Cassim, and A. Hirsch (2014). 'Policy Co-ordination and Growth Traps in a Middle-Income Country Setting: The Case of South Africa'. WIDER Working Paper 2014/155. Helsinki: UNU-WIDER. <https://doi.org/10.35188/UNU-WIDER>
- Brys, B., S. Perret, A. Thomas, and P. O'Reilly (2016). 'Tax Design for Inclusive Economic Growth'. OECD Taxation Working Paper 26. Paris: OECD. <https://doi.org/10.1787/5jlv74ggk0g7-en>
- Calitz, E., T. Steenekamp, and K. Siebrits (2019). *Public Economics*, 7th edition. Cape Town: Oxford University Press.
- Chan, M.K., T. Morris, C. Polidano, and H. Vu (2022). 'Income and Saving Responses to Tax Incentives for Private Retirement Savings'. *Journal of Public Economics*, 206: 104598. <https://doi.org/10.1016/j.jpubeco.2021.104598>
- Chetty, R., J.N. Friedman, S. Leth-Petersen, T.H. Nielson, and T. Olsen (2014). 'Active vs Passive Decisions and Crowd-Out in Retirement Savings Accounts: Evidence from Denmark'. *The Quarterly Journal of Economics*, 129(3): 1141–219. <https://doi.org/10.1093/qje/qju013>

- Department of Social Development (2021). *Green Paper on Comprehensive Social Security and Retirement Reform (2021)*. Pretoria: Republic of South Africa. Available at: www.gov.za/sites/default/files/gcis_document/202108/45006gon741.pdf (accessed 10 November 2022).
- Duncan, D., and S.K. Peter (2016). 'Unequal Inequalities: Do Progressive Taxes Reduce Income Inequality?' *International Tax Public Finance*, 23: 762–83. <https://doi.org/10.1007/s10797-016-9412-5>
- Fadejeva, L., and O. Tkacevs (2022). 'The Effectiveness of Tax Incentives to Encourage Private Savings'. *Baltic Journal of Economics*, 22(2): 110–25. <https://doi.org/10.1080/1406099X.2022.2109555>
- Gerber, C., A. Klemm, L. Liu, and V. Mylonas (2018). 'Income Tax Progressivity: Trends and Implications'. IMF Working Paper 18/246. Washington, DC: IMF. <https://doi.org/10.5089/9781484383087.001>
- Hardcastle, R. (2012). 'How Can We Incentivise Pension Saving? A Behavioural Perspective'. Working Paper. London: Department for Work and Pensions Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/214406/WP109.pdf (accessed 10 July 2023).
- Hyman, D.N. (2010). *Public Finance: A Contemporary Application of Theory to Policy*, 10th edition. Mason, OH: South-Western Cengage Learning.
- Kollamparambil, U., and M.N. Etinzock (2019). 'Subjective Well-Being Impact of Old Age Pension in South Africa: A Difference in Difference Analysis across the Gender Divide'. *South African Journal of Economic and Management Sciences*, 22(1): 1–12. <https://doi.org/10.4102/sajems.v22i1.2996>
- López-Laborda, J., J. Onrubia, and C. Marín-González (2022). 'The Removal of Tax Expenditures from Spanish Personal Income Tax: Impact on Tax Collection and Income Distribution'. *Public Budgeting and Finance*, 42: 221–54. <https://doi.org/10.1111/pbaf.12312>
- National Treasury (2014). *Budget Review 2014*. Pretoria: Government Printer. Available at: www.treasury.gov.za/documents/national%20budget/2014/review/default.aspx (accessed 21 July 2023).
- National Treasury (2019). *Budget Review 2019*. Pretoria: Government Printer. Available at: www.treasury.gov.za/documents/national%20budget/2019/default.aspx (accessed 15 May 2023).
- National Treasury and SARS (2023). *2022 Tax Statistics*. Pretoria: Government Printer. Available at: www.sars.gov.za/about/sars-tax-and-customs-system/tax-statistics (accessed 3 March 2023).
- Nhamo, S., and E. Mudimo (2020). 'Shifting from Deductions to Credits: Unpacking the Distributional Effects of Medical Expenditure Considerations in South Africa'. UNU-WIDER SA-TIED Working Paper 95, March. Helsinki: UNU-WIDER. <https://doi.org/10.35188/UNU-WIDER/2020/787-3>
- O'Brien, L. (2023). 'The Effect of Tax Incentives on Private Pension Saving'. IFS Working Paper 23/10. UK: Institute for Fiscal Studies (IFS).
- OECD. (2016). *OECD Pensions Outlook 2016*. Paris: OECD Publishing. http://dx.doi.org/10.1787/pens_outlook-2016-en
- Orthofer, A., S. Du Plessis, and M. Reid (2019). 'Private Wealth in a Developing Country: Evidence from South Africa'. *Review of Income and Wealth*, 65(3): 632–56. <https://doi.org/10.1111/roiw.12361>
- Reddy, T., and A. Sokomani (2008). 'Overview of the South African Social Security System'. In *Corruption and Social Grants in South Africa*. Pretoria: Institute for Social Studies (ISS). Available at: <https://issafica.org/chapter-2-overview-of-the-south-african-social-security-system> (accessed 10 November 2022).
- Redonda, A., and C. Axelson (2021). 'Assessing Pension-Related Tax Expenditures in South Africa: Evidence from the 2016 Retirement Reform'. UNU-WIDER SA-TIED Working Paper 167, March. Helsinki: UNU-WIDER. <https://doi.org/10.35188/UNU-WIDER/2021/992-1>
- Republic of South Africa (2020). *National Policy Development Framework 2020*. Pretoria: The Presidency of the Republic of South Africa. Available at:

www.gov.za/sites/default/files/gcis_document/202101/national-policy-development-framework-2020.pdf (accessed 10 November 2022).

- Republic of South Africa (2021). 'Department of Social Development Withdraws the Green Paper on Comprehensive Social Security and Retirement Reforms'. Media statement, 1 September. Pretoria: Department of Social Development, Republic of South Africa. Available at: www.dsd.gov.za/index.php/latest-news/21-latest-news/392-department-of-social-development-withdraws-the-green-paper-on-comprehensive-social-security-and-retirement-reforms (accessed 10 November 2022).
- Saba, A., and J. Coetzee (2018). 'The Future of the Middle Class Is Bleak'. *Mail & Guardian*, 5 October. Available at: <https://mg.co.za/article/2018-10-05-00-the-future-of-the-middle-class-is-bleak> (accessed 18 June 2023).
- SARS (South African Revenue Service) (2016). *2016 Budget Tax Guide*. Pretoria: SARS: www.treasury.gov.za/documents/national%20budget/2016/sars/budget%20pocketguide%202016-17.pdf (accessed 30 November 2022).
- SARS (n.d. 1). 'Budget'. Available at: www.sars.gov.za/about/sars-tax-and-customs-system/budget/?swpmtx=ca878222aa2dfa38ba8ae7eef24725d8&swpmtxnonce=277e3d3559 (accessed 30 November 2022).
- SARS (n.d. 2). *Comprehensive Guide to the ITR12 Income Tax Return for Individuals*. Pretoria: SARS. Available at: www.sars.gov.za/wp-content/uploads/Ops/Guides/IT-AE-36-G05-Comprehensive-Guide-to-the-ITR12-Income-Tax-Return-for-Individuals-External-Guide.pdf (accessed 1 December 2022).
- Steyn, W., A. Sithole, W. Ngobeni, E. Muwanga-Zake, H. Barnes, M. Noble, D. McLennan, G. Wright, and K. Gasior (2021). 'Simulating Personal Income Tax in South Africa using Administrative Data and Survey Data: A Comparison of PITMOD and SAMOD for Tax Year 2018'. UNU-WIDERSA-TIED Working Paper 186, July. Helsinki: UNU-WIDER. <https://doi.org/10.35188/UNU-WIDER/2021/060-3>
- Toder, E., S. Khittrakun, and B. Boddupalli (2020). *Tax Incentives for Retirement Savings*. Washington, DC: Tax Policy Center, Urban Institute and Brookings Institution. Available at: www.urban.org/sites/default/files/publication/102198/tax-incentives-for-retirement-savings.pdf (accessed 7 September 2023).
- Waidler, J., and S. Devereux (2018). 'Social Grants, Remittances, and Food Security: Does the Source of Income Matter?' *Food Security*, 11: 679–702. <https://doi.org/10.1007/s12571-019-00918-x>
- Whitehouse, E. (1999). 'The Tax Treatment of Funded Pensions'. Available at: www.oecd.org/finance/private-pensions/2391559.pdf (accessed 12 January 2023).

Appendix

Tables A1 to A9 provide PITMOD results for the 2020 tax year.

Table A1: Overview of aggregate income sources and government revenues

	Scenario 1: no retirement deductions				Scenario 2.1: retirement tax credit at 35%				Scenario 2.2: retirement tax credit at 26%			Scenario 2.3: retirement tax credit at 31%		
	Baseline (million ZAR)	Reform (million ZAR)	Change (million ZAR)	Change (%)	Reform (million ZAR)	Change (million ZAR)	Change (%)	Reform (million ZAR)	Change (million ZAR)	Change (%)	Reform (million ZAR)	Change (million ZAR)	Change (%)	
(1) Total original income	3,094,174	3,094,174	0	0	3,094,174	0	0	3,094,174	0	0	3,094,174	0	0	
Retirement contributions	274,900	0	-274,900	-100	0	-274,900	-100	0	-274,900	-100	0	-274,900	-100	
Other deductions	34,864	34,864	0	0	34,864	0	0	34,864	0	0	34,864	0	0	
Exemptions and losses	53,388	53,508	120	0.2	53,508	120	0.2	53,508	120	0.2	53,508	120	0.2	
(2) Taxable income	2,731,022	3,005,802	274,780	10.1	3,005,802	274,780	10.1	3,005,802	274,780	10.1	3,005,802	274,780	10.1	
Gross tax liability	696,443	788,904	92,462	13.3	788,904	92,462	13.3	788,904	92,462	13.3	788,904	92,462	13.3	
General tax rebate	152,394	153,813	1,419	0.9	153,813	1,419	0.9	153,813	1,419	0.9	153,813	1,419	0.9	
Medical tax credit	23,698	23,014	-683	-2.9	23,014	-683	-2.9	23,014	-683	-2.9	23,014	-683	-2.9	
Tax on lump sums	22,536	22,536	0	0	22,536	0	0	22,536	0	0	22,536	0	0	
Final tax liability	542,887	634,613	91,726	16.9	541,961	-926	-0.2	565,568	22,682	4.2	552,428	9,541	1.8	
(3) Total net income	2,551,287	2,459,561	-91,726	-3.6	2,552,213	926	0	2,528,605	-22,682	-0.9	2,541,746	-9,541	-0.4	

Note: includes foreign income sources; negative incomes due to higher losses than profits are excluded from the calculation of aggregated amounts; other employee-related income includes restraints of trade, arbitration awards, independent contractor income, labour broker income, and other related income sources; other income sources include royalties and income sources not specified in other components; see the PITMOD manual for a detailed explanation on each component.

Source: authors' construction based on PITMOD output.

Table A2: Total number of taxpayers

	Scenario 1: no retirement deductions				Scenario 2.1: retirement tax credit at 35%			Scenario 2: retirement tax credit at 26%			Scenario 3: retirement tax credit at 31%		
	Baseline (N)	Reform (N)	Change (N)	Change (%)	Reform (N)	Change (N)	Change (%)	Reform (N)	Change (N)	Change (%)	Reform (N)	Change (N)	Change (%)
(1) Total original income	14,748,000	14,748,000	0	0	14,748,000	0	0	14,748,000	0	0	14,748,000	0	0
Retirement contributions	7,027,000	0	-7,027,000	-100	0	-7,027,000	-100	0	-7,027,000	-100	0	-7,027,000	-100
Other deductions	497,900	497,900	0	0	497,900	0	0	497,900	0	0	497,900	0	0
Exemptions and losses	2,215,400	672,800	-1542600	-69.6	672,800	-36,500	-5.1	672,800	-1542600	-69.6	672,800	-1542600	-69.6
(2) Taxable income	14,699,900	14,700,000	100	0	14,700,000	100	0	14,700,000	100	0	14,700,000	100	0
Gross tax liability	14,699,900	14,700,000	100	0	14,700,000	100	0	14,700,000	100	0	14,700,000	100	0
General tax rebate	14,699,700	14,699,800	100	0	14,699,800	100	0	14,699,800	100	0	14,699,800	100	0
Medical tax credit	2,818,500	2,834,400	15,900	0.6	2,834,400	15,900	0.6	2,834,400	15,900	0.6	2,834,400	15,900	0.6
Tax on lump sums	424,100	424,100	0	0	424,100	0	0	424,100	0	0	424,100	0	0
Final tax liability	7,235,100	7,473,900	238,800	3.3	6,990,600	-244,500	-3.4	7,127,700	-107,400	-1.5	7,054,800	-180,300	-2.5
(3) Total net income	14,811,700	14,811,700	0	0	14,811,700	0	0	14,811,700	0	0	14,811,700	0	0

Note: all individuals with a value different from 0 in the underlying income component are considered as taxpayers of the specific component; includes foreign income sources; other employee-related income includes restraints of trade, arbitration awards, independent contractor income, labour broker income, and other related income sources; other income sources include royalties and income sources not specified in other components; see the PITMOD manual for a detailed explanation on each component.

Source: authors' construction based on PITMOD output.

Table A3: Distribution of taxpayers by taxable income groups

Scenario 1: no retirement deductions						
Taxable income (thousand ZAR)	Baseline (N)	Baseline (%)	Reform (N)	Reform (%)	Change (N)	Change (% points)
0–70	7,335,000	48.3	7,122,500	46.9	-212,500	-1.4
70–150	2,704,000	17.8	2,688,400	17.7	-15,600	-0.1
150–250	1,750,200	11.5	1,636,900	10.8	-113,300	-0.7
250–350	1,219,000	8	1,119,000	7.4	-100,000	-0.7
350–500	1,016,800	6.7	1,136,900	7.5	120,100	0.8
500–750	638,300	4.2	811,300	5.3	173,000	1.1
750–1,000	250,800	1.7	317,900	2.1	67,100	0.4
1,000–1,500	167,100	1.1	222,900	1.5	55,800	0.4
1,500+	110,000	0.7	135,400	0.9	25,400	0.2
Total	15,191,200	100	15,191,200	100	0	0

Source: authors' construction based on PITMOD output.

Table A4: Distribution of taxable income, by taxable income groups

Taxable income (thousand ZAR)	Scenario 1: no retirement deductions					
	Baseline (million ZAR)	Baseline (%)	Reform (million ZAR)	Reform(%)	Change (million ZAR)	Change (% points)
0–70	203,881	7.5	194,706	6.5	–9,175	–1
70–150	277,895	10.2	274,776	9.1	–3,119	–1
150–250	345,121	12.6	322,532	10.7	–22,589	–1.9
250–350	362,316	13.3	332,512	11.1	–29,805	–2.2
350–500	422,340	15.5	474,016	15.8	51,676	0.3
500–750	385,746	14.1	488,319	16.2	102,573	2.1
750–1,000	215,100	7.9	273,006	9.1	57,906	1.2
1,000–1,500	199,239	7.3	266,450	8.9	67,212	1.6
1,500+	319,385	11.7	379,485	12.6	60,101	0.9
Total	2,731,022	100	3,005,802	100	274,780	

Source: authors' construction based on PITMOD output.

Table A5: Distribution of tax liability, by taxable income groups

Taxable income (thousand ZAR)	Scenario 1: no retirement deductions						Scenario 2.1: retirement tax credit at 35%				Scenario 2.2: retirement tax credit at 26%				Scenario 2.3: retirement tax credit at 31%			
	Baseline (million ZAR)	Baseline (%)	Reform (million ZAR)	Reform (%)	Change (million ZAR)	Change (%)	Reform (million ZAR)	Reform (%)	Change (ZAR million)	Change (%)	Reform (million ZAR)	Reform (%)	Change (million ZAR)	Change (%)	Reform (million ZAR)	Reform (%)	Change (million ZAR)	Change (%)
0–70	4,953	0.9	4,819	0.8	-134	-0.2	4,819	0.9	-134	0	4,819	0.9	-134	-0.1	4,819	0.9	-134	
70–150	12,465	2.3	12,091	1.9	-374	-0.4	8,574	1.6	-3,892	-0.7	9,310	1.6	-3,156	-0.7	8,884	1.6	-3,582	-0.7
150–250	36,503	6.7	34,719	5.5	-1,784	-1.3	26,178	4.8	-10,325	-1.9	28,330	5	-8,173	-1.7	27,127	4.9	-9,376	-1.8
250–350	54,594	10.1	50,830	8	-3,764	-2.0	39,377	7.3	-15,217	-2.8	42,318	7.5	-12,276	-2.6	40,684	7.4	-13,910	-2.7
350–500	82,210	15.1	92,989	14.7	10,780	-0.5	73,145	13.5	-9,065	-1.6	78,246	13.8	-3,963	-1.3	75,412	13.7	-6,798	-1.5
500–750	95,637	17.6	120,539	19	24,901	1.4	100,270	18.5	4,632	0.9	105,482	18.7	9,844	1.0	102,586	18.6	6,949	1.0
750–1,000	63,438	11.7	80,459	12.7	17,021	1.0	69,847	12.9	6,409	1.2	72,576	12.8	9,138	1.1	71,060	12.9	7,622	1.2
1,000–1,500	65,907	12.1	87,945	13.9	22,038	1.7	78,194	14.4	12,288	2.3	80,701	14.3	14,795	2.1	79,309	14.4	13,402	2.2
1,500+	127,179	23.4	150,222	23.7	23,043	0.2	141,557	26.1	14,379	2.7	143,785	25.4	16,607	2.0	142,548	25.8	15,369	2.4
Total	542,887	100	634,613	100	91,726	0	541,961	100	-926	0	565,568	100	22,682	0	552,428	100	9,541	0

Source: authors' construction based on PITMOD output.

Table A6: Gini, by income concepts and tax elements

	Scenario 1: no retirement deductions			Scenario 2.1: retirement tax credit at 35%		Scenario 2.2: retirement tax credit at 26%		Scenario 2.3: retirement tax credit at 31%	
	Baseline	Reform	Change (% points)	Reform	Change (% points)	Reform	Change (% points)	Reform	Change (% points)
Wage income	65.5	65.5	0	65.5	0	65.5	0	65.5	0
Capital income	99.9	99.9	0	99.9	0	99.9	0	99.9	0
Total original income	65.6	65.6	0	65.6	0	65.6	0	65.6	0
Tax deductions	81.2	98.4	17.2	98.4	17.2	98.4	17.2	98.4	17.2
Taxable income	64.4	65.2	0.8	65.2	0.8	65.2	0.8	65.2	0.8
Gross tax liability	72.6	73.3	0.7	73.3	0.7	73.3	0.7	73.3	0.7
Final tax liability	85.2	84.4	-0.8	86.0	0.8	85.5	0.3	85.8	0.6
Total net income	61.8	61.1	-0.7	61.7	-0.1	61.5	-0.3	61.6	-0.2

Source: authors' construction based on PITMOD output.

Table A7: Average tax rate, by taxable income groups

Taxable income (thousand ZAR)	Scenario 1: no retirement deductions			Scenario 2.1: retirement tax credit at 35%		Scenario 2.2: retirement tax credit at 26%		Scenario 2.3: retirement tax credit at 31%	
	Baseline: average tax rate	Reform: average tax rate	Change (% points)	Reform: average tax rate	Change (% points)	Reform: average tax rate	Change (% points)	Reform: average tax rate	Change (% points)
0–70	2.4	2.4	-0.1	2.4	-0.1	2.4	-0.1	2.4	-0.1
70–150	4.5	5.2	0.7	3.4	-1	3.8	-0.7	3.6	-0.9
150–250	10.6	11.8	1.2	8.7	-1.9	9.5	-1.1	9.1	-1.5
250–350	15.1	16.8	1.7	12.8	-2.3	13.8	-1.2	13.3	-1.8
350–500	19.5	21.4	1.9	17.1	-2.3	18.2	-1.2	17.6	-1.8
500–750	24.8	26.4	1.6	22.6	-2.2	23.6	-1.2	23	-1.8
750–1,000	29.5	30.7	1.2	27.1	-2.4	28	-1.5	27.5	-2
1,000–1,500	33.1	33.9	0.8	30.6	-2.5	31.5	-1.6	31	-2.1
1,500+	39.8	40.1	0.3	38.1	-1.7	38.6	-1.2	38.4	-1.5
Total	19.9	21.1	1.2	18	-1.8	18.8	-1.1	18.4	-1.5

Source: authors' construction based on PITMOD output.

Table A8: Effective tax rate, by taxable income groups

Taxable income (thousand ZAR)	Scenario 1: no retirement deductions			Scenario 2.1: retirement tax credit at 35%		Scenario 2.2: retirement tax credit at 26%		Scenario 2.3: retirement tax credit at 31%		
	Baseline: effective tax rate	Reform: effective tax rate	Change (% points)	Reform: effective tax rate	Change (% points)	Reform: effective tax rate	Change (% points)	Reform: effective tax rate	Change (% points)	
0–70	2.3	2.3	0.0	2.3	0	2.3	0.0	2.3	0.0	
70–150	4.1	5.1	1.0	3.4	-0.8	3.8	-0.4	3.6	-0.6	
150–250	9.5	11.6	2.1	8.6	-0.9	9.3	-0.2	8.9	-0.6	
250–350	13.1	16.5	3.3	12.6	-0.5	13.6	0.5	13	-0.1	
350–500	16.8	20.9	4.2	16.8	0	17.9	1.1	17.3	0.5	
500–750	21.4	25.7	4.3	21.9	0.5	22.9	1.5	22.3	0.9	
750–1,000	25.5	29.7	4.1	26.1	0.6	27	1.5	26.5	1.0	
1,000–1,500	28.9	32.6	3.7	29.5	0.6	30.3	1.4	29.8	1.0	
1,500+	35.2	37.6	2.4	35.7	0.5	36.2	1.0	36	0.7	
Total	17.5	20.5	3	17.5	0	18.3	0.7	17.9	0.3	

Source: authors' construction based on PITMOD output.

Table A9: Income composition, by taxable income groups and income bands—reform vs baseline scenario

	(1) Total original income	Employee income	Business income	Farming income	Other income	Retirement contribution	Other deductions	Exempt/losses	(2) Taxable income	Gross tax liability	General tax rebate	Medical tax credit	Tax on lump sums	Final tax liability	(3) Total net income
0–70	-1,380	-1,356	-11	1	-15	-927	3	2	-459	-83	-83	0	1	1	-1,381
70–150	-7,292	-7,154	-68	6	-77	-6,656	-107	34	-564	-101	7	-113	-117	-1,421	-5,871
150–250	-19,214	-19,466	5	-2	249	-18,990	-74	1	-151	-36	62	-511	-60	-4,864	-14,350
250–350	-38,273	-38,742	19	35	415	-37,991	-332	123	-74	-14	38	-513	177	-9,596	-28,677
350–500	-57,150	-54,077	-853	-69	-2,151	-56,996	-1,083	-647	1,575	520	-61	-930	-570	-16,514	-40,636
500–750	-83,186	-76,533	-2,356	-253	-4,045	-75,076	-4,237	-1,436	-2,437	-962	-75	-17	-386	-26,240	-56,946
750–1,000	-104,899	-96,313	-18	-16	-8,552	-99,524	-2,972	-3,527	1,124	461	-100	80	-328	-33,229	-71,670
1,000–1,500	-121,884	-101,908	-4,268	-439	-15,270	-122,396	1,883	-4,420	3,048	1,250	-65	38	-1,144	-43,610	-78,274
1,500+	-305,162	-218,834	-21,565	-1,736	-63,027	-175,193	-1,172	-27,999	-100,799	-45,359	-82	-76	-1,503	-110,695	-194,466
0–189,880	-3,885	-3,815	-51	1	-19	-3,356	-39	8	-498	-90	-30	-60	-40	-653	-3,232
189,881–296,540	-26,574	-26,983	69	38	302	-26,323	-49	52	-254	-66	47	-650	96	-6,473	-20,101
296,541–410,460	-44,487	-43,855	48	-8	-673	-46,884	-635	-141	3,172	980	-7	-720	-401	-12,384	-32,104
410,461–555,600	-64,358	-59,632	-1,584	-136	-3,006	-63,774	-1,984	-989	2,389	858	-76	-429	153	-18,719	-45,639
555,601–708,310	-87,232	-80,384	-2,577	124	-4,394	-77,445	-4,979	-1,745	-3,063	-1,194	-67	-1	-1,058	-28,120	-59,112
708,311–1,500,000	-101,315	-90,313	-1,540	-491	-8,971	-105,649	-1,064	-3,053	8,451	3,465	-78	31	-558	-33,381	-67,935
1,500,001+	-305,162	-218,834	-21,565	-1,736	-63,027	-175,193	-1,172	-27,999	-100,799	-45,359	-82	-76	-1,503	-110,695	-194,466
Total	0	0	0	0	0	-18,096	0	8	18,088	6,087	93	-45	0	-61	61

Source: authors' construction based on PITMOD output.

Table A10: Income tax—individuals and trusts

Tax rates for the year ending 29 February 2020

Taxable income (ZAR)	Rate of tax (ZAR)
0–195,850	18% of taxable income
195,851–305,850	35,253 + 26% of taxable income above 195,950
305,851–423,300	63,853 + 31% of taxable income above 305,850
423,301–555,600	100,263 + 36% of taxable income above 423,300
555,601–708,310	147,891 + 39% of taxable income above 555,600
708,311–1,500,000	207,448 + 41% of taxable income above 708,310
1,500,001 and above	532,041 + 45% of taxable income above 1,500,000

Rebates	
Primary	ZAR14,220
Secondary (persons 65 and older)	ZAR7,794
Tertiary (persons 75 and older)	ZAR2,601

Age	
Below 65	ZAR79,000
Age 65 to below 75	ZAR122,300
Age 75 and older	ZAR136,750

Source: authors' construction based on SARS (2023) (<https://www.sars.gov.za/>).