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## Tax research in South Africa

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WIDER Working Paper 2019/9

## Tax Research in South Africa

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**Abstract:** This framing paper has two main purposes. We first provide a brief survey of the economic literature on taxation in South Africa. Second, we attempt to offer some ideas about areas and topics on which more information is needed and which are therefore suitable topics for further research. Replications of earlier studies conducted using older South African data or from elsewhere, are also considered in this context. We present our thoughts on gaps in the literature and make some recommendations on future research possibilities.

**Keywords:** taxation, South Africa, literature, tax incidence, tax administrative data

**JEL classification:** H20

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## 1 Introduction

This framing paper reviews relevant economic literature on taxation in South Africa<sup>1</sup> and offers some thoughts on further research. The paper focuses on economics research and, therefore, other areas (including research on tax law) are not dealt with in detail. The paper also synthesizes some of the findings from a South African Revenue Service (SARS) report on questionnaire responses by tax experts. A summary of the report is available as a separate document at the SA-TIED webpage (see UNU-WIDER n.d.).

In addition to more theoretical work on taxation, applied tax research usually consists of studies in the following broad areas:

- **Tax incidence:** This is related to examining who will eventually pay the financial burden of a tax. The financial burden can fall on different individuals to those who actually remit the tax to the authorities. For example, value-added tax (VAT) is applied to prices, and consumers are eventually affected by the tax because of diminished real income. Similarly, corporate income tax can lead to higher prices for consumers and lower wages and salaries for workers, as well as reducing the rate of return of firm owners.
- **Distributional impacts of tax benefit policies:** Much of this work examines the impact of tax benefit policies on the distribution of income and consumption possibilities and on the reduction of market income inequality by fiscal instruments between households at different income levels. However, interest in examining differences between groups of people (e.g. divided by ethnicity, gender, or area) has increased in recent years.
- **The causal impact of tax policies on taxpayer behaviour:** This work typically utilizes variations in the tax treatment generated by tax reforms or discontinuities in the tax schedules to create a situation where some, but not all, taxpayers face tax changes. This quasi-experimental research strategy, combined with having access to large administrative databases, has dominated modern empirical tax research recently. Researchers have used this approach to examine the impacts of taxation on various outcomes, including labour demand and supply, investment and savings, and reactions in taxable income. The reactivity of the tax base, or the elasticity of taxable income, has been shown to be a key variable of interest, as it is (under certain conditions) a valid summary measure of the distortions the tax system creates. See Saez et al. (2012) and Kleven (2016) for surveys.
- **Work on tax systems more broadly:** This involves the impacts of administrative procedures on tax collection, in particular the consequences of compliance measures meant to mitigate tax avoidance and evasion. The theoretical underpinning for such work is provided by Keen and Slemrod (2017), who show how the responsiveness of the tax base to administrative measures is another useful indicator which is needed to guide tax policies. Given globalization and the importance of multinational enterprises for small open economies, work on gauging the extent of international tax avoidance is of special interest.
- **The role of taxation as a corrective device:** It is well known that tax instruments can also be used to restore efficiency in the presence of externalities. Examples include the

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<sup>1</sup> Much of this work is very recent and has been made possible by access to administrative, taxpayer-level data. For a description of these data, see Pieterse et al. (2018).

impacts of corrective environmental taxation and subsidies on research and development expenditures.

This paper proceeds as follows. Section 2 offers a short literature review of empirical work in economics research on taxation in South Africa. The section is organized according to research on different tax instruments. In Section 3, we appraise the literature reviewed in the light of the broad thematic research areas outlined above and attempt to identify important areas of missing information. This could be used in considering future research topics in the area of tax.

## **2 Literature review**

### **2.1 Personal income tax**

As mentioned in the introduction, a key outcome measure is the responsiveness of the personal income tax base, that is, taxable income to changes in the marginal income tax rate. As far as we know, the only study in this area using South African data is the one by Kemp (2017). He uses administrative data provided by SARS and the National Treasury and examines the elasticity of taxable income based on the idea of ‘bracket creep’ or ‘fiscal drag’. This is the notion that if the tax band thresholds are not raised in the same proportion as income growth, taxpayers close to a kink point in the marginal income tax schedule face an increase in their marginal income tax rate, whereas people located further away from the kink point form a comparison group. The estimated elasticity of taxable income is in the area of 0.25–0.3, whereas the elasticity of broad income (income before deductions) is lower. These findings are in line with international evidence. A caveat, raised by Kemp (2017), the author of this carefully conducted econometric paper, is that the identifying variation used for measuring tax changes would ideally have been greater.

The Employment Tax Incentive, targeted at employers of young low-income workers, is a major tax policy measure that is meant to reduce unemployment among South African youth. Ranchhod and Finn (2015) use the Quarterly Labour Force Survey data to examine the impacts of the initiative on youth employment and find a zero impact. It is important to note that they estimate the effect of being eligible, in other words the intention to treat effect rather than the treatment impact on the treated. Ebrahim et al. (2017) instead use tax data to examine the change in labour demand for youth at firms claiming the tax incentive. Using a matched difference-in-difference approach, the authors find that, with the exception of very large firms, there is an increase in youth employment at subsidy-claiming firms in comparison to non-subsidy-claiming firms.

Using a tax benefit microsimulation model that does not include behavioural reactions, Rasmussen (2017) simulates the impacts of introducing a negative income tax in South Africa. The tax consists of a lump-sum grant given to all, which is taxed away when income increases via a proportional income tax. She simulates two different amounts of lump-sum benefits and finds that the poverty eradication achieved by the policy implies a great fiscal burden for the government.

Continuing in the area of distributional impacts, Wright et al. (2018) consider different options for financing a universal child benefit via changes in the personal income tax. The analysis is conducted using the South African tax benefit microsimulation model (SAMOD), a static tax benefit microsimulation model. The simulated reforms offer different alternatives for policy makers to consider should they wish to expand child benefits.

A large-scale evaluation of the redistributive impacts of fiscal policies in South Africa, conducted using the ‘commitment for equity’ method and 2011/12 data, is available in Inchauste et al. (2015).

They find that the burden of taxes—namely the personal income tax, VAT, excises on alcohol and tobacco, and fuel levy—falls on the richest in South Africa, and social spending results in sizeable increases in the incomes of the poor. The extent of inequality and poverty reduction using these instruments is considerably large compared with other emerging markets. Inequality falls from 0.77 to 0.69 as measured by the Gini index due to direct taxes and transfers, and the food poverty headcount ratio falls from 40.8 per cent to 23.4 per cent. Even after taxes and transfers, inequality remains extremely high.

Maboshe and Woolard (2018) continue this analysis and dig deeper into details of the tax system, in particular tax allowances. They find that the medical tax credit and the (partial) exemption of interest income are regressive, i.e. they increase income inequality. They also document how the distribution of the transfers is not particularly well targeted among Whites, Coloureds, and Indians/Asians. Most transfers are, however, highly progressive.

Gcabo and Robinson (2007) carried out a unique study that uses an experimental economics approach to examine the determinants of attitudes towards taxation. They find that the subjects' behaviour is determined to a large extent by economic factors, along the lines of expected utility theory, but psychological factors are also important.

## **2.2 Taxes on consumption**

Two studies investigate the suitability of zero-rating of certain expenditure items in value-added taxation as a redistributive device. Jansen and Calitz (2015) examine the implications of removing zero-rating on the real incomes of the poor. Their results indicate that zero-rating helps the poor proportionally more than other income classes because of a greater expenditure share of zero-rated goods among low-income households.

Oordt (2018) studies the same issue, but he also asks whether the same poverty reduction could be achieved at a lower cost by using the recouped revenue from abolishing zero-rating to finance cash transfers to the poor. To do so, he builds on his earlier work (Oordt 2016) and uses a QUAIDS (quadratic almost ideal demand system) consumption demand system for South Africa for eight broad consumption categories and a separate model for different foodstuff demand. He uses the model to simulate the impacts of various scenarios where zero-rating is (partially) abolished and the revenues are used to finance cash transfers. His main conclusion is that cash transfers are the preferred instrument if all the additional revenue from eliminating the zero rate can be earmarked and there is no leakage in targeting the transfer.

## **2.3 Value-added tax**

In South Africa, value-added tax (VAT) is a critical form of revenue for the government. It is levied at the rate of 15 per cent on goods and services produced in and imported to South Africa. Sandford et al. (1981) suggest that VAT is the most burdensome of all business taxes. They note that the compliance costs of VAT tend to be disproportionately high, constituting a major disadvantage to set against its significant merits. VAT compliance costs comprise three core elements: unpaid helpers' time, tax practitioners' fees, and incidental costs (such as computer software packages). A number of other costs also need to be taken into consideration.

To improve compliance and VAT revenues, while still taking into consideration the compliance costs, developing countries should consider many of the legal designs and administrative remedies. Legal design features include technological solutions that support electronic invoicing, higher VAT thresholds, limitation of exemptions and zero-rated items, moving to a single-rate VAT, introducing special small business schemes (subject to caveats), and providing an option for cash

method accounting for VAT. Administrative remedies that warrant attention include: the centralization of VAT systems and their collection processes; the introduction of integrated electronic systems that replace time-consuming manual practices; risk-based registration and audit processes that accord with appropriate risk identification and management protocols; keeping the filing of returns and supporting documentation to a minimum; the introduction of streamlined refund systems that maintain processing times of 30 days or less; the provision of appropriate resources; and the upskilling of revenue officials to ensure delivery of efficient quality services to taxpayers.

The outcomes of the research by Evans et al. (2014) are reasonably consistent across all four countries studied (Canada, UK, South Africa, and Australia) and confirm that compliance costs for the small business sector continue to be high in both absolute and relative terms. Even within the sector they are very regressive, and transactional taxes such as the government sales tax (GST)/VAT continue to have the highest compliance costs. The research also shows that these compliance costs do not appear to be reducing over time (Lignier and Evans 2012; Lignier et al. 2014). While money and time spent on compliance are the items most frequently measured, small business owners may also experience anxiety and psychological costs in meeting their tax obligations (Woellner et al. 2001).

The use of VAT zero-rating has become widely accepted internationally to mitigate the progressivity of the tax. From an economic perspective, it is still debatable as to whether VAT zero-rating is the most cost-effective way of targeting the poor. Jansen and Calitz (2016) address some topical issues on VAT zero-rating in South Africa. They first ask whether (conceptually) zero-rating should be a consideration within the context of the tax theory literature, and then quantify the impact on the poor if zero-rating were to be removed, as well as the tax revenue implications thereof. They compare the cost of VAT zero-rating with the benefits, using data sourced from the Income and Expenditure Survey 2010/11 and the Estimates of National Expenditure. Their findings show that VAT zero-rating (compared with existing social transfer programmes) is not cost effective when targeting the poor.

## **2.4 Corporate income tax**

The World Bank (2015) calculates marginal effective tax rates (METR) for capital investment across different sectors in South Africa. The analysis is based on sector aggregates of parameter values, such as depreciation rates, capital structure, and tax allowances, to calculate the effective tax burden on marginal investments. They note that, with the exception of a certain type of mining, all sectors face a lower METR than the statutory corporate tax rate of 28 per cent. There is, however, substantial variation in METRs, which range from - 19.7 percent to around 31.9 % per cent depend on economic sectors. This is due to some sectors benefitting from accelerated depreciations and the beneficial tax treatment of debt. The results indicate that the policy measures that work towards creating a more neutral corporate tax system should be considered.

Carreras et al. (2017) also examine effective tax rates (ETRs) using a more data-driven than theory-based method. They use the ratio of tax liability to gross profits as their measure of an ETR, and they provide descriptive analysis of how the ETR is highest for smaller firms, lowest for mid-size firms, and higher for the largest companies. One of their findings is that expenses do not fully explain the ETR pattern across the distribution, especially for small corporations.

Based on simulations conducted using a computable general equilibrium model (CGE), Erero and Gavin (2015) investigate the impacts of the dividend tax increase on the South African economy. They find the initial effect to be small and positive but that the impact grows over time. This

surprising finding of a positive growth impact from the dividend tax increase is due to a rise in the savings rate driven by greater government resources.

Turning to econometric work, Boonzaier et al. (2018) investigate the consequences of the small business tax regime for the behaviour of target group firms. This is a tax incentive targeted at companies whose turnover does not exceed R 20 million and which fulfil some additional criteria. The profits of these companies were taxed at a progressive scale from zero to 28 per cent. Using the bunching approach, they find that firms strongly respond to these tax incentives (i.e. firms' profits tend to be located in the areas just below the kink points where the marginal tax rate on profits increases). However, the authors argue that the large number of observations before the kink point suggests a significant part of this response is due to reporting rather than real behaviour. One indication is that bunching at the upper kink point is very sharp and the excess mass moves immediately when the location of the kink point is changed in a consecutive year.

Lediga et al. (2018) offer a rich analysis of corporate taxation and the effects of enforcement in a paper that combines information from SARS corporate income tax returns, audits, and the country's commercial register. In 2008 and 2014, SARS merged information from companies listed in the commercial register to identify tax-evading firms. The comparison of the two administrative datasets revealed 300,000 evading firms. After these extensive margin evaders were forced to register as taxpayers, they continued to report lower incomes than firms that had always been in the tax net. The analysis suggests that the gap in reported income is due to the smaller size and productivity of non-compliant firms, which is in line with the idea of there being a 'missing middle'<sup>2</sup> of firms in developing/emerging economies, where some firms choose to remain smaller to 'fly under the radar'. One of the findings corroborating this mechanism is that when firms were audited, their reactions in terms of corrected income at the intensive margin were similar irrespective of their earlier extensive margin-evading status. The additional revenue gathered from these companies amounted to R2.2 billion, suggesting that cross-checking different administrative databases is a promising avenue for improving compliance.

In response to concerns about tax compliance costs, governments have often endeavoured to implement tax policies in the form of concessions that produce favourable outcomes for the small business sector (Pope 2008: 14). Such special tax concessions for small businesses fall mainly into two categories: positive concessions that provide a lower rate of taxation, an exemption, or an accelerated deduction; and relieving concessions that excuse the taxpayer from requirements otherwise imposed (Payne 2003: 87). While the first category of provisions can be expected to have some impact on the burden of tax compliance, it is the second category that is expected to have the more significant impact on the compliance costs of all small businesses. Such relieving provisions include registration thresholds, simplified accounting rules, and time-related concessions.

Small business taxpayers surveyed for the study by Evans et al. (2014) perceived that they were deriving benefits from tax compliance activities in the form of better financial information that helped them to manage their businesses. The two main sources for these benefits seemed to be the enhanced quality and accuracy of record keeping and access to better knowledge of financial affairs. The generally consistent results suggest that the realization of managerial benefits was not dependent on the specific nature of tax compliance obligations. However, even though a majority of taxpayers in all four countries perceived managerial benefits, their importance might vary. Further research is required in each country to attempt to measure the extent of these benefits.

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<sup>2</sup> See Dharmapala et al. (2011).



Smulders et al. (2012) conducted a deductive research approach using a survey strategy. Their empirical study collected data from respondents by means of an electronic questionnaire distributed by the SARS, which was the measurement instrument in this study. The findings of the survey indicate that there is a possible slight bias towards the larger end of the small business sector, but that comparison with previous tax compliance cost studies was nevertheless justified.

It was estimated that it took small businesses (not on the turnover tax system) an average of 255 hours per year to comply with tax legislation. Turnover tax respondents spent just under two-thirds of the time (155 hours) complying with their tax obligations compared to similar businesses not registered for this tax. The means gross tax compliance cost for small businesses is R63,328 per year (R53,356 for internal plus R9,882 for external tax service provider costs). Net tax compliance costs could not be calculated as the value of the managerial benefits could not be quantified. Notwithstanding this, it was confirmed for the first time in South Africa that a large majority (75 per cent) of the respondents perceived that there were benefits from tax compliance. In particular, they believed that keeping tax records was an incentive to keep better and more accurate records and that this, in turn, led to better knowledge about the financial position and profitability of their businesses

The study by Smulders et al. (2012) uses multiple regression analyses to investigate the factors influencing small businesses' internal tax compliance costs (hours spent on internal tax compliance activities). As well as providing information on the significant determinants per tax type, the results of the regression analyses enabled a comparison to be made to understand whether these determinants are the same across the different tax types. The statistically significant determinants of internal tax compliance costs included the following: number of employees (PAYE), sector (capital gains tax (CGT) and income tax), legal form (VAT and income tax), age of the business (CGT and turnover tax), turnover (VAT, income tax, PAYE, and turnover tax), the level of education of the respondent (income tax), the accounting knowledge of the respondent (income tax and PAYE), the use of an external service provider (VAT and PAYE), and the type of accounting system used (VAT).

Finally, there are interesting studies in the area of taxing multinational companies. While controlling for other determinants of profitability, Reynolds and Wier (2016) estimate how the profits of multinationals based in South Africa are related to the tax rate of the parent company. The results from firm-level analysis suggest that reported profits in South Africa tend to be lower the lower the tax rate in the home country is, suggesting that multinational companies have managed to find ways to shift income using transfer mispricing. Interest payments are, likewise, driven by the tax difference. The extent of the link between profitability in South Africa and parent company tax rate appears to be stronger than in high-income countries.

Wier (2018) uses very detailed transaction-level data to examine whether multinational companies adhere to 'arm's-length' pricing practices in their international transactions. He compares the transactions on a similar product within the same company group that take place between high and low tax rate affiliates. He finds that related imports from low-tax countries are overpriced by at least 8 per cent compared to the estimated arm's-length price. This is a statistically significant piece of evidence, which is highly indicative of purposeful transfer mispricing. The size of the effect is, perhaps somewhat surprisingly, not greater than what has been found in earlier studies using data from high-income countries. He also examines the efficacy of recent policy measures targeted at combatting transfer mispricing. These measures do not appear to have any long-term effects on international income shifting.

## 2.5 Corrective taxation, tax mix, and tax simplification

Alton et al. (2014) offer a CGE analysis of the likely outcomes of introducing a carbon tax in South Africa. A carbon tax large enough to help reach the emission reduction target reduces employment and welfare but does not take account of all the potential benefits. The way that revenues are recycled in the economy has strong distributional impacts.

Although it is a study in public health, Manyema et al.'s (2014) study is partially based on economic research. It estimates the likely impact of taxing sugary drinks, based on consumption data from the 2012 SA National Health and Nutrition Examination Survey and a previous meta-analysis of studies on own- and cross-price effects of the consumption of these drinks. The authors find that such a sugar tax could significantly lower obesity and related illnesses.

Koch (2018) argues that tobacco taxes are sin taxes that are intended to reduce tobacco consumption and to be regressive. However, such tobacco control policies might have the adverse effect of further harming the poor. If, however, the consumption of tobacco decreases to a greater extent amongst the poor than the rich, then tobacco control policies may prove to be progressive, when health effects are taken into account. Koch (2018) analysed two income and expenditure surveys (IES) for 2005/06 and 2010/11, which covered years of tax increases. The analysis matched 7,806 pairs of households where tobacco was consumed and 4,909 pairs of households where cigarettes were consumed. This enabled the author to study the regressivity of the household tobacco burden and of tobacco taxes. As in previous studies of cigarette and tobacco expenditures, the study showed the tobacco burden to be regressive. However, the findings also indicated that, over the five-year period measured, the tobacco burden had reduced from the 2010/11 survey and that there was less of a burden on poor households at the time of the 2005/06 survey.

There is ongoing debate in the literature about the level of influence that governments' taxation policies can have on the economy and, in particular, about the degree to which the mix of direct and indirect taxes can be used to optimize revenue and growth. De Wet et al. (2005) used the two-sector model developed by Feder (1983) and Odedokun (1999) to study the impact that governments' revenue collection activities can have on the economy and found that governments have a limited ability to use taxes to influence economic growth. As is the case in economic theory, De Wet et al.'s (2005) results showed that real economic growth is negatively correlated with the collection of direct tax revenue, while the collection of indirect tax has no significant effect. This means that it might be possible for governments to influence economic growth if they vary the mix of direct and indirect taxes, as economic growth may increase if the direct tax burden is reduced.

Requests to simplify taxation are frequently heard but attempts to achieve actual tax simplification have rarely met with much lasting success. To investigate this further, Steyn and Stiglingh (2016) contribute to the literature by relating the experience of tax simplification in South Africa. As well as providing information on tax simplification in general, the authors provide information on simplification in relation to the following aspects: tax systems, tax law, taxpayer communications, tax administration, and any more fundamental approaches. A considerable degree of complexity is inevitable given the different aims of taxation and the complex socioeconomic environments in which tax systems have to operate in different countries. The key question is how to distinguish complexity which is necessary for the functioning of a successful tax system from that which is not. The authors focus on the relevant factors and issues involved in classifying unavoidable and unnecessary complexity with respect legislation and to tax policy and administrative systems.

## 2.6 Taxpayer rights in South Africa

Fritz (2018) showed that both South Africa and Nigeria give individuals the right to have a dispute adjudicated by an impartial forum. The author demonstrated that Nigeria's general approach ensures that a taxpayer's right of access to the courts remains intact. However, the South African 'pay now, argue later' rule unreasonably and unjustifiably limits a taxpayer's right of access to the courts. This approach results in the effective and efficient collection of taxes, whereas the Nigerian approach of suspending the payment obligation pending dispute resolution may not be as effective from a revenue collection point of view. The author suggests that South Africa should consider whether there are any less-invasive alternatives to affect the speedy collection of taxes while ensuring that a taxpayer's right of access to the courts is not unreasonably and unjustifiably limited.

Keulder (2015) explains that the Tax Administration Act and the Customs and Excise Act give SARS the power to conduct a search and seizure without first obtaining a warrant, with the justification that it enables SARS to act straightaway, thus preventing tax evaders from destroying or hiding evidence of their evasion. The author states that certain circumstances need to be present before a warrantless search can be conducted, and certain guidelines must be adhered to when a warrantless search-and-seizure operation is conducted to demonstrate that the warrantless-search framework of the Customs and Excise Act is inconsistent with the warrantless-search framework of the Tax Administration Act.

In examining the constitutionality of the 'pay now, argue later' rule, Keulder (2015) established that a balance has to be achieved between the speedy collection of taxes and the taxpayer's right to approach the court. In the case of Metcash Trading Ltd, the court held that this balance was in fact achieved and, accordingly, that the 'pay now, argue later' rule was constitutional in terms of the VAT Act. Therefore, it does not create a precedent regarding income tax matters. The court still has to determine whether the 'pay now, argue later' rule in income tax matters will stand constitutional scrutiny. Keulder (2015) concluded that the legislature had failed to make productive use of the opportunity to draft legislation that would achieve a balance between SARS's duty and a taxpayer's right of access to the courts.

Nondabula (a taxpayer) brought an application to prevent SARS from invoking the provisions of Section 179 of the Tax Administration Act, No. 28 of 2011 (TAA) pending the final determination of the taxpayer's objection to an additional assessment of his income tax (Botha 2017). Furthermore, the taxpayer sought an order for SARS to withdraw its third-party notice, in terms of which SARS instructed Absa to withhold and pay over monies held in the taxpayer's bank account. The case reiterated that as much as taxpayers have a duty to pay tax, SARS also has duties that it has to comply with in order to be entitled to collect such tax. A taxpayer who is faced with a situation where an assessment is raised by SARS which does not meet the formal requirements of Section 96 of the TAA and which does not provide the grounds for raising the assessment, should be aware that SARS is not entitled to enforce payment based on such an assessment, as such an assessment is unlawful.

Fritz (2017) indicated that while obtaining a warrant on an ex parte basis achieves a balance, the same cannot be said for not requiring specific details with regard to what items may be searched for in terms of a warrant and allowing warrantless searches based on the subjective discretion of a SARS official. The article further considers the income tax-related search-and-seizure provisions in Canada and New Zealand in order to address the imbalances. From the comparative analysis, the author indicated that it is unnecessary for SARS to be permitted to conduct warrantless searches based on its subjective discretion in the current search-and-seizure framework.

### 3 Taking stock and thoughts on future research

Even this partial overview reveals that there is an increasing body of applied economic and econometric work on the South African tax system, much of it very recent. Many of the papers have not yet been published in peer-reviewed journals, which reflects the fact that the studies are so new. Indeed, some of the papers arguably have a great potential to be published in quality journals. Some areas appear to be fairly well covered, but even within these areas there is scope for further work. In addition, many studies are currently underway; see UNU-WIDER (n.d.) for a list of these studies.

We summarize potential future research areas below:

1. One area on which there is virtually no research is the first broad area mentioned in the introduction to this paper, namely tax incidence. This may be because there is a lack of sufficient tax variation for examining the matter, but in principle, research on the incidence of, for example, the corporate income tax would be of great relevance.
2. While there is already work on the distributional impacts of the whole fiscal system, additional studies on simulating likely impacts of policy reforms, taking account of dynamic impacts, would be welcome.
3. Work on careful causal analyses of the impacts of taxation has started but continues, of course, to be an area of great interest. Little is known, for instance, on the impact and scope of taxes on informal sector activities. Similarly, the analysis of behavioural reactions to taxes and tax incentives by firms other than corporations, i.e. sole proprietors and partnerships, is missing completely. Knowledge of the overall impacts of tax incentives on small and medium-sized firms (SMEs) is crucial given their role in employment generation.
4. While microsimulations of personal and consumption taxation exist, we believe there is no similar model for taxation of firms and their owners. Such a model would help with understanding how potential changes to corporate taxation affect different firms, and it would open up a way for further study of behavioural reactions by firms.
5. Another topic with little existing research is corrective taxation, e.g. on environmental taxes other than a tax on carbon.
6. Taxation of the digital economy is a new topic everywhere, including in South Africa.
7. Research on tax compliance or avoidance has only just started. Interesting research questions abound: How large are the compliance costs (especially for SMEs)? Should the tax system be simplified and, if so, how should this be accomplished? What is the role of behavioural economics in tax compliance? How large are the tax gaps? It would be particularly helpful to examine the success of different kinds of compliance interventions, including audits. However, the currently available data do not facilitate such analysis, and this is an important consideration when planning improvements on the data front.<sup>3</sup>

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<sup>3</sup> We understand that such data are particularly sensitive and can probably only be accessed within SARS.

8. Tax administrative procedures have not yet been examined, but they should be. More work is needed to understand how international best practices can be implemented. The tax capacity and efforts of local governments should also be investigated.
9. One area where there has been great progress in many other African countries but not in South Africa is research based on field experiments.<sup>4</sup> In this strand of work, researchers and tax administrators collaborate and study the effectiveness of different types of (compliance) interventions, often using randomized controlled trials. Such research holds great promise for offering insights into improving tax practices.

#### **4 New data, new approaches**

The South African Revenue Service made anonymized tax data available to researchers through a joint SARS-National Treasury-UNU-WIDER initiative. These include company income tax (CIT), personal income tax, VAT, and customs tax data. The data include the population of employees and firms in the formal sector.

The tax administrative data is anonymized at SARS and is only available to researchers within the National Treasury Secure Data Facility in Pretoria, South Africa. The tax administrative data offers several advantages over survey data:

- large sample size: full population paying taxes in South Africa
- longitudinal in nature: tax data available from 2008 to 2017
- Linked data: the CIT, PIT, customs, and VAT data are all linked in the CIT-IRP5 panel; see Pieterse et al. (2018) for a full description of the CIT-IRP5 panel.

The data permit analyses at the individual and firm-level, encouraging new research approaches for examining tax policy questions.

The tax administrative data are not suitable for answering all tax research questions, and we therefore also accept and encourage proposals using other data.

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<sup>4</sup> For a review, see Mascagni (2018).

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