UNISA ECONOMIC RESEARCH WORKING PAPER SERIES

REVISITING CORPORATE INCOME TAX DETERMINANTS IN SOUTHERN AFRICA

Forthcoming: [DEVELOPMENT SOUTHERN AFRICA]

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Working Paper 13/2020

September 2020

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Revisiting corporate income tax determinants in Southern Africa

Abstract

The corporate income tax (CIT) systems in place in developing countries can potentially be contributors or impediments to their economic development. This is especially relevant in the SADC region that has a set agenda regarding regional integration goals (SADC, 2019). As part of economic integration, tax harmonisation benefiting all members through tax reform efforts is the central idea. Despite the importance of the topic, empirical literature remains scant, with Robinson (2005) being one of the few papers that directly models the determinants of CIT within SADC. This current paper is an attempt to revisit CIT determinants in the SADC region. With a larger data base at the disposal of the authors, existing empirical literature could be suitably updated. The sample period includes varying fortunes for developing countries in general and SADC specifically, namely, commodity booms and slumps following the global financial crises. Furthermore, given lower economic growth together with variable commodity prices since 2008, there is a concern that corporate tax revenue may continue to erode. A cross-section panel is utilised to find those factors that may best explain changes in corporate taxes in Southern Africa over time from 1980 to 2017.

Keywords: Corporate income tax, Southern Africa
JEL code: H25, H32

1. Introduction

Corporate income tax (CIT) systems can potentially be contributors or impediments to economic development of present developing countries with a particularly difficult dilemma. On the one hand, their reliance on this tax is greater than in advanced economies. Limited tax administration and enforcement capacity puts a primacy on taxes that are easy to collect and enforce. Since CIT payments are usually concentrated to a few large taxpayers, the administrative benefits of corporate-level taxation relative to personal income tax systems are particularly relevant in the context of developing countries. On the other hand, such countries are likely to face particular pressure to maintain regimes attractive to multinational companies, so as to attract investment, jobs and technology (Dharmapal and Hines 2009: 1063). Thus, for poorer countries, corporate tax revenues as a proportion of total tax revenues are much more important than for richer countries. The IMF (2014) showed that developing countries are up to three times more vulnerable to negative effects of other countries' tax rules and practices than developed nations.

In this regard, Robinson (2005) argued that in developing countries, public needs should take precedence over tax policies that generate uncertain revenue: The question being, is it the internal public needs, i.e. a coordinated effort that determine corporate income taxes (CIT), or external competitive pressures that determines corporate income tax rates in developing countries? Empirical evidence on this remains scant. Most existing studies focus on trends in corporate tax rates and changes in tax bases such as Keen and Simone (2004), Keen and Mansour (2010) and Abbas et al. (2012). In the context of the SADC, a few recent studies have been published on tax coordination in the region: However, these studies tend to focus on indirect taxes, such as VAT (see Letete, 2012). Robinson (2005) remains the only study that focusses on the determinants of corporate income tax in the SADC region.

Since the early 2000's, interesting trends in corporate tax rate and systems have been observed. For example, Norregard and Khan (2007) found that total tax revenues as a percentage of GDP did not increase significantly in least developed countries over the turn of this century. Corporate tax revenues, by contrast, increased from around 13% of total tax revenue from the 1990's, to approximately 21% of total tax revenue in the 2000's. This aligns with the theory that lower tax rates lead to higher collections

as the intention to evade or avoid diminishes. From there it becomes imperative to investigate the determinants of corporate tax rates in developing countries in general and the SADC in particular.

The hypothesis relates to the following: Firstly, do external competitive pressures determine corporate income tax (CIT) rates in the SADC[1] region? If so, it is accepted that international and/or inter-regional pressure (tax competition) plays a vital role with varied consequences, especially also in terms of fiscal sustainability in the region. Competition in this context might lead to a natural process of tax rate convergence, inhibiting the growth of governments and ultimately fiscal discipline and/or restraint.
On the opposite side of the spectrum, it might lead to under-taxation and consequently an under-supply of government services and thus a "dilemma", the so-called "race to the bottom". It is therefore essential to investigate whether this convergence, also in a macroeconomic sense, has been taking place and what the future outcome may hold for Southern Africa. Alternatively, if external factors are not responsible for these changes, one needs to accept that other influences are playing a role. In an attempt to find these alternative factors affecting CIT-rates, one needs to explore the second hypothesis, i.e. whether internal or local pressure for public goods delivery determine the CIT-rates in the SADC region? If this problem statement holds true, it is accepted that internal (local) pressure takes precedence in the determination of CIT-rates. Internal needs for public goods delivery then becomes a priority, together with varied consequences (Robinson, 2005).

2. Background

Together, the 15 SADC Member States have a population of over 200 million with an expanding consumer class, but many SADC economies are too small to draw significant investment on their own. Thus, regional integration and cooperation are at the centre of the organisation as a means of creating a more attractive environment for foreign investment. Tax coordination and harmonisation are regarded as basic requirements for economic integration. It is from this background that SADC's Memorandum of Understanding on Co-operation in Taxation and Related Matters and the SADC Protocol on Finance and Investment are seen as tools, which are intended to achieve coordination and harmonisation of taxation laws within the region and avoid harmful tax competition with each other through tax incentives (IMF, 2015b). However, the implementation of the guidelines and the protocol is lagging behind (Letete, 2010 Diakité et al., 2017 and Ade et al., 2017). There remains a wide range of incentives with overlapping and sometimes incoherent mandates. Current taxation regimes are often complex, with most countries applying tax reliefs that vary depending on the type of investment, its location, activity or ownership structure (e.g. domestic versus foreign-owned business). Many tax incentives remain discretionary and there is uncertainty as to whether they meet their intended objectives (UNCTAD, 2015).

The structure of many developing economies, with many small producers operating outside the formal sector or officially exempt on the grounds of their size, could lead to high dependence of revenue authorities on a few large businesses. In terms of tax revenue to GDP ratios, DRC is less than 13 per cent, Angola, Zambia, Malawi and Tanzania are between 13 and 18 per cent, with the remainder of the SADC members above 18 per cent. For some countries, the tax revenue to GDP target is still below the minimum level of 20 per cent considered by the UN as necessary to achieve the Millennium Development Goals. South Africa (27%) finds itself ahead of other countries such as Australia (22,2%), Brazil (12,7%) and the United States (11,9%). The world average, according to the IMF, was 15,4% in 2017. Consideration that social security contributions are not included, and that child, disability and old age grants or universal credits are excluded, should be borne in mind.

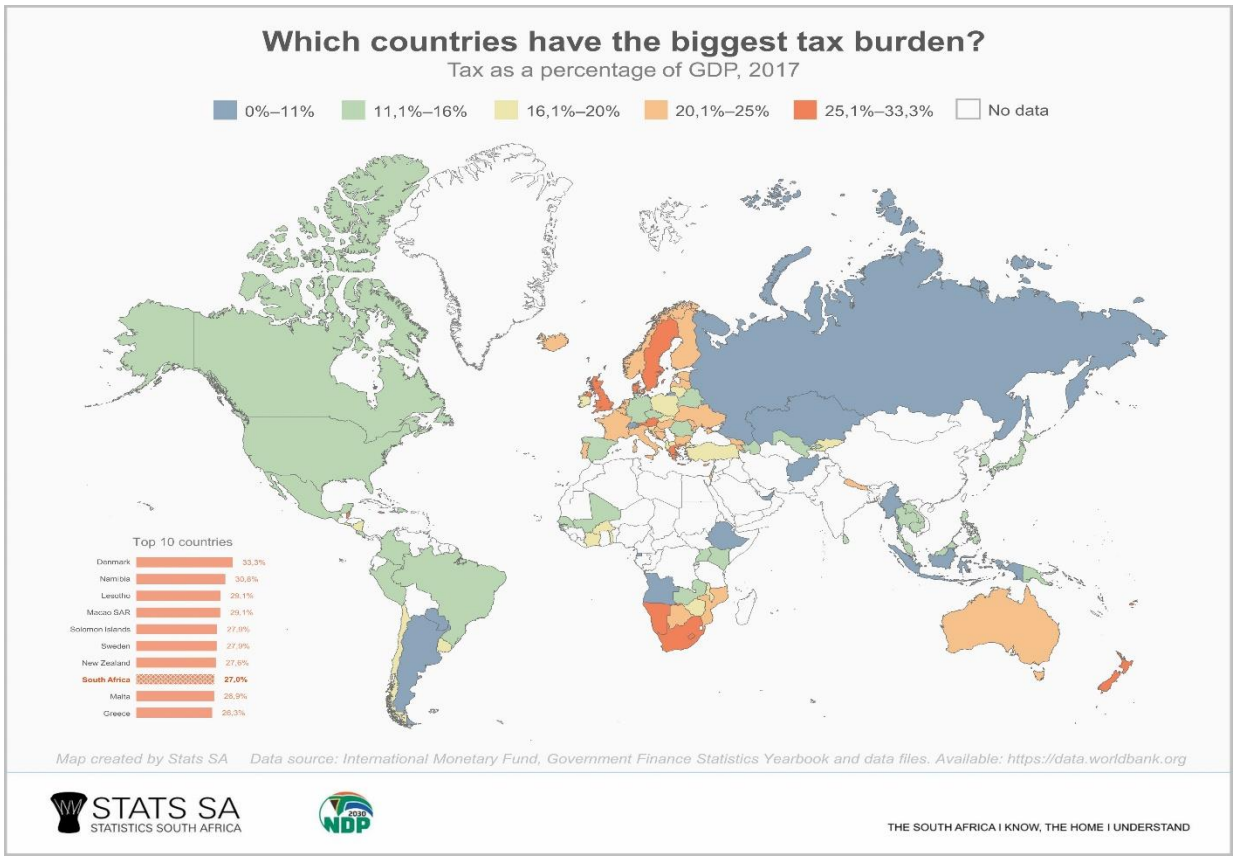
Whether a high GDP-to-tax ratio is a good or a bad thing is dependent upon each country's view. For a nation that has a high ratio, where taxpayers are receiving good value for money, a high tax burden

[1] SADC or the Southern African Development Community consists of member countries Angola; Botswana; Comoros, Democratic Republic of the Congo (DRC), Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland (Etikwini), Tanzania, Zambia, and Zimbabwe.

might not be that detrimental. Countries such as Denmark, Sweden and Norway have high tax-to-GDP ratios, but these nations also report the highest standard of living.

A very low tax-to-GDP ratio can be problematic as it may be a sign of an inefficient tax system. A government will struggle to provide services, build infrastructure or maintain public goods if it fails to collect taxes during periods of strong economic growth. The tax-to-GDP ratio alone provides no indication of good governance, the efficiency of the taxation system in the country, nor the way in which taxes are used or distributed.

However, the Southern African Customs Union (SACU) countries that rely on South Africa for revenue are in close proximity, with countries such as Lesotho's tax to GDP at 29.1 per cent and Namibia at 30.8 per cent per cent. . In developed countries, such as Denmark and the United Kingdom this ratio was 33 per cent (StatsSA, 2019). Base broadening is thus still an objective for less developed regions such as Southern Africa, where economic growth is still low in South Africa together with a resultant high unemployment rate.



This is particularly alarming in the context of the literature that shows that, a lack of a certain level of harmonisation of the national tax systems and a lack of harmonised tax policy could compromise SADC integration as a whole (e.g. IMF, 2015b: 30).

3. Literature review

The origin of tax competition literature

Tax competition is presented in the academic literature as a game between two or more countries that choose simultaneously and non-cooperatively their tax policy, usually their tax rate, on an internationally mobile tax base, usually capital. In simple terms, tax competition includes the welfare effect of one country's tax policy when goods and/or factors of production are traded internationally.

It therefore deals with various measures or strategies that can be taken by governments on the same or horizontal level, but also different or vertical levels to adjust their tax rates or reconsider their tax systems (especially tax bases), in order to attract mobile factors of production from other regions. Tax competition therefore does not only occur through the lowering of tax rates, but also from changes or distortions in tax bases that are less visible and more difficult to assess. Mobile tax bases include income from sales and services (commodities), income and assets from labour, income from rentals and royalties, income from portfolio capital (interest income), and income from corporate profits or investment capital.

The pioneer works on tax competition are Zodrow and Mieszkowski (1986), Wilson (1986), Wildasin (1988), and Kanbur and Keen (1993). The model of Zodrow and Mieszkowski (1986) reflected a situation in which two small economies that are not able to influence interest rates, compete with each other for capital. By lowering its own tax rate in the model, a country is able to extract capital from the other country, as capital will locate itself where the cost is lowest. Since both countries will adopt the same strategy, this will inevitably lead to a "race to the bottom".

Since capital is far more mobile than other production factors, the focus of research on tax competition lies on the taxation of capital income. That is, the elasticity for the supply of capital is relatively high, making reduction of the cost of having capital, such as corporate income taxes as one of the factors, an attractive opportunity for governments to attract capital. This mobility induces some international spill-overs in the design of national tax policy. Interdependencies (fiscal externalities) trigger a "race to the bottom", as each country tries to attract a disproportionate share of the mobile capital tax base. In equilibrium, tax rates are lower in both countries than they would otherwise be, resulting in lower tax revenues and/or a shift of the tax burden to immobile tax bases.

Nearly all the models considered above predict that capital mobility decreases the source-based tax on the mobile factor (capital) and shifts the tax burden towards immobile factors (labour), Capital mobility also decreases tax revenues and the provision of public goods, thereby undermining the fairness and social acceptance of tax. There are, however, counteracting or mitigating factors, including size of the country, agglomeration benefits, foreign ownership, political pressure. The strength of each of these factors is largely an empirical issue.

Tax competition literature can be extended to include various other theories. In an open economy, governments often cannot fully tax foreign destined income due to capital flight (tax evasion) or the manipulation of transfer prices within multinational corporations). Governments are not always inclined to report to foreign fiscal authorities on, for instance, income from those residents investing abroad (Baccheta and Espinosa, 1992 and 1995). . However, double taxation agreements and exchange of information has occurred internationally. Empirical evidence has been provided in terms of tax enforcement problems (tax evasion) and thus the survival of capital income taxes (Gordon, 1992).

Based on models such as that of Zodrow and Mieszkowski (1986), a small body of literature started to develop that tried to give insight in how countries determine their corporate tax rates. Variables employed in these types of studies include country-specific determinants. According to the public finance literature, understanding tax systems requires an understanding of their interaction with the quality of institutions and economic structure (e.g. Auerbach *et al.* 2013). It also includes external pressures such as the effect of economic integration within a region (e.g. Devereux et al., 2008 and Devereux, Griffith & Klemm, 2005).

Country-specific determinants of corporate tax rates are especially relevant in the developing country context. Wilson (1991) argued that smaller countries face a more elastic supply of capital curve. As a consequence, lowering corporate tax rates will have a relatively larger beneficial effect in terms of attracting capital (Wilson 1999, 278) and has a smaller base of local investors, so that pressures to cut tax rates are likely to be stronger (e.g. Bucovetsky, 1991).

The advantage of size reduces fiscal stress in small countries because it broadens the revenue base; directly through capital inflows and higher revenues from capital taxation and indirectly, because the capital inflows push up the capital–labour ratio (i.e., labour becomes relatively more scarce, which increases its worth) and thus fuel revenues from labour and consumption taxation.

4. Empirical evidence

Empirical research on this matter yielded mixed results. When looking at the effects of wealth, size and openness, Mutti (2003) did find consistently significant support for Wilson's claim when analysing three different periods, by using dummy variables to distinguish between small and large countries based on population size. Bretschger and Hettich (2002), using size as an exogenous variable and openness as an endogenous one, found a negative relationship between the effective capital tax rates and size. Although, this too was not statistically significant. Other empirical research with less focus on the size-factor, also found mixed results: De Nood (2012) does find rather strong evidence for a positive relationship between statutory tax rates and the size for European countries between 1981 and 2010, when using a multitude of proxies for the size factor; though Overesch and Rincke (2011) did not find such a relationship at all, using a rather similar data set, including 32 European countries between 1983 and 2006. These discrepancies raise the question whether there in fact is a difference between small and large countries, as Wilson (1991) explained it. Rixen and Dietsch (2016) show that corporate tax rates are significantly associated with country size using a sample of 110 countries in 2010. By and large, small countries do try to cash in on their advantage of size as hypothesized by economic theory, though conclusions generally point to the structural advantage of small size really being an advantage of small democracies.

Other country-specific factors that help in explaining corporate tax rates, as Slemrod (2004), Mutti (2003), Clausing (2007) and others note, is the level of the individual tax rate of a particular country. Corporate income taxes work as a sort of "backstop" to personal income taxes. That is, as personal income tax rates increase, corporations will try to reclassify labour income as general business income, to defer taxation on the personal level. Overesch and Rincke (2011) found a positive relationship between the two variables.

It is reasonable to expect that there would be a relationship between revenue needs for expenditures and corporate tax rates, as proxied by government expenditure as G:GDP: Slemrod (2004) used this variable in explaining statutory tax rates.

Since economic integration tends to increase the mobility of capital, it is generally accepted that economic integration leads to lower taxation on corporate income. Empirical evidence in this regard remains mixed. Earlier researchers, including Garret (1995), Slemrod (2004) Clausing (2007) and De Nood (2012), found a significant negative relationship between openness and corporate tax burdens: That is, a higher level of trade or economic openness leads to higher capital mobility and thus to a higher elasticity of capital supply. Kumar and Quinn (2012) found no general negative relationship between financial globalization and corporate tax rates and revenues: Results vary according to country grouping, with OECD countries showing a positive relationship: The United States exhibits a "Stackelberg" type of leadership on other countries; trade integration is inversely correlated with tax rates and public sentiment and ideology affect tax rates**.** This relates to the argument of Leibrecht and Hochgatterer (2012) that corporate tax rates may fall for reasons other than tax competition. Such reasons include 'common intellectual trends' such as tax-rate-cut-cum-base-broadening approaches, due to concerns about the deadweight loss of taxation resulting from high tax rates (Devereux, Griffith and Klemm, 2005) and changes in the political climate towards a more business-friendly environment (Musgrave, 1990; Persson and Tabellini, 2000).

Empirical evidence on corporate income tax developments in developing economies remains scant. Most of the existing studies focus on trends in corporate tax rates and changes in tax bases. These studies include Keen and Simone (2004), Keen and Mansour (2010) and Abbas et al. (2012). In the African

context Petersen (2010) provide a detailed overview of the basics of the East African Community (EAC) integration and tax harmonisation process. The review is aligned to Doe (2006), who highlighted the importance of harmonising domestic consumption taxes in Central and Western African countries towards improved revenue positions for countries in the regions.
In the context of the SADC, a few recent studies have been published on tax coordination in the region, though these studies tend to focus on indirect taxes, such as VAT. Previous studies on taxation in the SADC (Letete, 2012) have largely been theoretical and have principally focused on the possibility of harmonising indirect taxes (mainly value added tax or VAT). More recent studies by Ade et al. (2017) shows some important policy implications for the SADC (given its heterogeneous nature), aimed at enhancing the process of regional tax harmonisation. There is a need for the SADC to develop policies aimed at collectively expanding the corporate tax base so as to accommodate the relatively low optimum CIT rates: This is of particular importance, as the adoption of lower optimum CIT rates may lead to a reduction in tax revenue or the opposite even. However, Robinson (2005) remains the only study that focuses on the determinants of corporate income tax in the SADC region.

5. Methodology

In this section, the design of a suitable model that can fully or partly explain changing tendencies over time in CIT in Southern Africa, becomes essential. Before this can be done, it is important to first observe and investigate real-life data and patterns, which can easily be observed on the surface. As a first step, the prevailing situation in the SADC region is detailed, so as to understand any shortcomings that may occur in the empirical analysis. The second step involves the acknowledgement of observable patterns in CIT over time. In the third and final step, the model is presented, with the intention of highlighting the causes for changing patterns in CIT over time.

5.1 Data analysis

As previously noted, taxation levels could also relate to the level of development in these countries. The level of development normally determines the size of the tax base, but also affects a country's capacity to administer taxes. Low state capacity also reduces governments' ability to cope with the negative fiscal consequences of tax competition. On the one hand, it becomes more difficult to police and prevent cross-border tax avoidance and evasion by rich domestic citizens and profitable companies; whilst on the other hand, given the large informal sector, it is difficult for governments to increase revenues by shifting the tax burden to labour and consumption. International tax competition thus compounds the domestic problems of raising tax revenues.

Varying degrees of development can be observed within the SADC according to the World Bank classification. Countries such as the DRC, Malawi, Mozambique, Tanzania and Zimbabwe are classified as low-income developing countries. Countries such Lesotho, Swaziland and Zambia are classified as low middle-income developing countries. Angola, Botswana ("low tax rate country", Mauritius "(low tax rate country"), Namibia and South Africa are upper middle-income countries. Seychelles is regarded as a high-income country, whilst also being a "low tax rate country". Some of these countries have already started with improved tax administration efforts in order to broaden their tax base.

Several studies also reported changes in the *effective tax burden* in the region. Effective taxation relates to various aspects concerning the decision-making process to invest, i.e. the user cost of capital. Keen and Mansour (2010) found that corporate tax bases have narrowed in Sub-Saharan Africa, especially through the spread of tax holidays and special zones, but surprisingly, tax revenues have held steady in this region. Several other papers highlighted the fact that Sub Saharan Africa is an outlier in terms of changes in the tax base over time, which was on average narrower. This is attributed to the widespread use of tax incentives granted under special regimes, which has brought effective tax rates close to zero in many countries and a "partial race to the bottom" (Abbas et al, 2012). All the countries in Southern

Africa have some special tax regime in place where in some instances it is brought close to zero. These trends confirm anecdotal evidence of governments in some low-income economies attempting to attract foreign direct investment (FDI) with extremely generous incentive schemes; though good governance, infrastructure and financial markets are needed for sustainable FDIs (Munongo & Robinson, 2017).

The above-mentioned papers, however, only report a count of the number of special regimes in a country and do not track their generosity or calculate their impact on effective tax rates: These issues will be addressed throughout the following discussion.

5.2 Changes in CIT rates in SADC, 1980-2017

So as to achieve an overall picture of the changing patterns and tendencies in CIT, Table 1 provides an overview of the mean and standard deviation of the statutory and average tax rates. The average tax rates represent a ratio of CIT revenues to GDP. In this regard, it is important to continuously take all shortcomings into consideration when utilising pure statutory CIT rates.

Table 1: Changes in corporate taxation in the SADC region, 1980-2015

Years	***Statutory rate***		***Average rate***	
	Mean	***S.D.***	***Mean***	***S.D.***
1980	0.4432	0.0549	0.0445	0.0261
1980-1985	0.4539	0.0570	0.0459	0.0289
1980	0.4432	0.0549	0.0445	0.0261
1980-1990	0.4128	0.0765	0.0349	0.0349
1980	0.4432	0.0549	0.0400	0.0194
1980-1995	0.3617	0.0542	0.0425	0.0340
1985	0.4539	0.0570	0.0542	0.0289
1985-1990	0.4128	0.0765	0.0598	0.0349
1985	**0.4539**	**0.0537**	0.0542	0.0190
1985-1995	**0.3617**	**0.0542**	0.0425	0.0340
1990	0.4128	0.0765	0.0598	0.0349
1990-1995	0.3617	0.0542	0.0425	0.0340
1990	**0.4128**	**0.0765**	**0.0598**	**0.0349**
1990-2000	**0.3303**	**0.0685**	**0.0209**	**0.0143**
1990	0.4128	0.0765	0.0598	0.0349
1990-2005	0.3237	0.0687	0.0209	0.0143
2000	0.3303	0.0685	0.0209	0.0143
2000-2005	0.3110	0.0825	0.0188	0.0921
2000	**0.3303**	**0.0685**	0.0209	0.0143
2000-2010	**0.2860**	**0.1010**	0.0204	0.0107
2005	**0.2390**	**0.1132**	0.0201	0.0103

2005-2010	0.2390	0.1132	0.0215	0.0115
2005-2015	0.2390	0.1132	0.0220	0.0105

Source: Author's calculations for different sets of country-year observations similar to Slemrod (2004).

The methodology used in Table 1 is similar to that of Slemrod (2004) and various other authors, with some minor adjustments. These calculations are being made by taking the first and end figures for the calendar year and added together and the results are then divided by 15 to get the average. The standard deviation is then also calculated from these figures. Each pair of intervals between 1980 and 2015 is conducted only for those countries where data is available for the beginning and ending year.

5.3 Trends in tax rates: Developing versus SADC

It can be observed that developing regions such as SADC closely follow declining tendencies, which since 1985 occurred in statutory CIT rates in the industrialised world.

In practice, developing countries have been cutting headline and effective CIT rates as have advanced countries, but they have made tax bases narrower rather than broader. Between 1985-1995 the mean statutory rate fell sharply from 45 to 36 per cent and continued into the 1990-1995 interval. The dispersion in these rates was at its highest in the latter interval, but started to stabilise during 1990-2005, which continued until 2015. For the average CIT rates, the largest decline in the mean and standard deviation occurred during 1990-2000, with the standard deviation stabilising from 2000-2005. From 2005 to 2015, the statutory rate again fell to 24 per cent. The data for the statutory CIT rates were not available and the average tax rates were used, i.e. tax revenue as percentage of GDP. Torslov et al. (2018) found that between 1985 and 2018, the global average statutory corporate tax rate fell by more than half, from 49 to 24 per cent. Torslov et al. (2018) argue that profit shifting is a key driver of the decline in corporate income tax rates. An IMF study of 2012, looked at corporate income tax regimes in 50 emerging and developing economies during 1996, but found no evidence of a global "race to the bottom" for standard tax systems. However, for special regimes, the "race to the bottom" has long taken place, with effective tax rates close to zero.

In the next section, an alternative procedure is followed in determining changing patterns and trends in CIT in the SADC region. The idea is to determine whether internal or external factors influence CIT and whether a regime of tax competition is being followed.

5.4 Empirical model

The discussion thus far suggests that a general empirical/prospective model as used by Robinson (2005) and Devereux & Loretz (2011), by explaining the impact of various independent variables on the statutory CIT-rate which could accept the following mathematical form:

Where: μ is the country dummy that represents country specific factors;

$$CIT_{it} = \mu_i + \lambda_t + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + ...\varepsilon_{it}\mu$$

λ is the time dummy that represents the change over time;
β representing the different coefficients; and
X the different SADC members involved.

The data used in the pooled estimations were mostly obtained from the International Financial Statistics (Government Financial Statistics), and the World Bank. The panel covers the period 1980 to the end of 2015. It is a Seemingly Unrelated Regression (SUR) of one tax rate measure plus a constant term. Developing regions such as SADC closely followed declining tendencies in CIT rates, as also observed

in the industrialised world. Between 1985-1995 the statutory and average rate fell, but this continuous fall only gained momentum or significance from 1995 onwards (Table 1).

Various econometric techniques have been tried and tested beforehand in order to find the most suitable for the study at hand. The so-called WITHIN and LSDV estimations, as well as random effects have been included in these. Finally, the SUR analysis (Zelner, 1962) that takes fixed effects into account was decided upon. This technique has also recently been used in other research (Aide, 2017). Table 2 shows the results concerning the statutory CIT rates. The first pair regressions are pooled least-squares regressions, with the first pair having only the internal or local variables (columns 1 and 2 for SACU), and the second pair of regressions having both local and international or external variables (column 3 and 4 for SADC).

Although there are some shortcomings to this method, the investigation attempts to eliminate these through the SUR analysis. This analysis makes provision for any further unexplained factors through taking the error term into account. If any linkages (information) exist between countries that irreversibly bond the countries through common grounds, which would most probably be the case for an economic block such as SADC, the SUR analysis would account for this. Common factors could for instance, include high HIV-AIDS infection ratios and high absolute poverty levels.

All results delivered good R-squares, i.e. well-fitted or explained models. The explanatory power of the independent variables in terms of the applicable dependent variable was thus good (see Table 2).

5.5 Statutory CIT rates

It is sometimes difficult to estimate the corporate tax base, as issues such as defining depreciation, measuring capital gains, costing inventories and accounting for inflation also require consideration. Economic or pure profits are therefore not always that clear-cut,

5.5.1 Dependent Variable: CIT rates

The statutory tax rate was chosen because it is transparent and easy to use, based on available evidence where corporations take this into account. Statutory corporate income tax rates do influence corporations in their decision where to shift their profits to (Devereux et al., 2008). Moreover, it is a measurement of the corporate tax burden that is a lot easier to work with. For these reasons, it is also the dependent variable of interest in this study.

The most common measure to use is the (top marginal) statutory corporate income tax rate. Some studies on tax competition use effective average tax rates (EATR) as a proxy for taxing the burden. The EATR is a measurement that includes the statutory rate, as well as deductions, exemptions and other credits. The effective tax burden relates to various aspects concerning the decision-making process to invest (user cost of capital). The effective tax rate of a corporation is normally a complex function of the statutory tax rate on corporate income, the extent of double taxation relief and the definition of the tax base, including the system of depreciation (King and Fullerton, 1984; OECD, 1991; Razin and Sadka, 1993). Withholding taxes, income exemption, special allowances, deduction and investment schemes become relevant

However, the calculation of EATR is subject to many assumptions, as it tries to simulate real investment decisions. Thus, it is not coherent in its use across multiple researches. Additionally, the added value of using EATRs is debatable. As Overesch (2005) argued, the main driver in the differences of EATRs between different countries is the statutory corporate income tax rate component.

With the above-mentioned as background, it is essential to note that not only is the “rent” element important for SMME’s, but natural resource companies tend to have a high “rent” (royalty) component. The SADC region has a vast natural resource base and each country has a different way of taxing these.

Some countries use differentiated CIT rates on different resources, whilst others use unique formulas designed for a specific natural resource (e.g. the tax formula used for gold production in South Africa).

The following models are used in the different columns of Table 2:

Column 1

Ln_CIT = f(ln_PIT; ln_PITNOCAP; ln_GOVEXP; SR)

Column 2

Ln_CIT = f(ln_PIT; ln_PITNOCAP; ln_GOVEXP; SR; O)

Column 3

Ln_CIT = f(ln_PIT; ln_PITNOCAP; ln_GOVEXP; ln_W; SR)

Column 4

Ln_CIT = f(ln_PIT; ln_PITNOCAP; ln_GOVEXP; ln_W; SR; O)

Where the variables can be described as follows:

Statutory corporate income tax rate [CIT]: These rates are taken from several issues of PriceWaterhouseCoopers (PWC) Corporate Tax: A Worldwide Summary. Statutory CIT correspond to the marginal CIT rate at the top bracket for central (national) government only.
Statutory personal income tax rate [PIT]: These rates are taken from several issues of PWCs Individual Tax: A Worldwide Summary. These rates correspond to the marginal individual income tax rate at the top bracket for the central government only.
Statutory personal income tax rate [PIT] interact with an indicator for the presence of capital gains tax [PITNOCAP]: (=1 if there is no capital gains taxation, adopting PIT value for that specific year, and 0 otherwise). These are taken from PWCs Individual Tax: A Worldwide Summary.

The personal income tax rate (PITR) on the other hand is expected to have a positive effect on the corporate income tax rates. This will mainly be due to governments using the corporate income tax as a backstop from personal income tax avoidance (Slemrod, 2004). To assess this effect, the top marginal income rates from the countries to be researched have been used. Also, the size of the economy has been included in the equation, measured by a country's GDP. There is little consent on the size-effect in the empirical literature.

5.5.3 Internal/local variables

Central government expenditure as ratio of GDP [GOVEXP]: Government expenditures are taken from several issues of the IMF's Government Finance Statistics.
Government spending as a fraction of GDP. As explained previously, the coefficient of this variable should be insignificant.

Withholding Tax [W]: This is a tax on earnings (royalties, management fees), interest or dividend payments deducted at source. The tax is designed to simplify the collection of tax and to ensure that

tax is not evaded. By taxing dividends due for repatriation, it is hoped that foreign-owned companies will be encouraged to invest in the country where its subsidiary is located.
Source/Residence principle [SR]: A dummy variable was included to describe the method of international taxation, either a source or residence principle.

5.5.4 External/international variable

Openness is expected to carry a negative sign. That is, greater capital mobility increases the elasticity of capital supply and hence drives down corporate tax rates. It is measured as the fraction of imports and exports of GDP.

Exports and Imports [O]: Exports plus Imports divided by GDP, i.e. X + M/GDP. See World Bank's World Development Indicator.

Table 2: Regressions in terms of the statutory CIT-rate (SACU and SADC)

Dependant variable: Statutory CIT rate

	1	2	3	4
Ln_PIT	0.96225	1.0177	0.044912	0.0598
	(0.0000)***	(0.0000)***	(-0.0016)**	(0.0000)***
Ln_PITNOCAP	-0.031961	-0.0496	-0.034856	0.480476
	(0.000)***	(0.000)***	-0.0094*	(0.0000)***
Ln_GOVEXP	-0.05696	-2.642435	0.722378	-0.727054
	(0.0000)***	(0.0000)***	(0.0000)***	(0.0000)***
Ln_W			-0.407	-0.150526
			(0.0000)***	(0.0000)***
SR	0.274652	0.247063	0.131215	0.274652
	(0.0000)***	(0.0000)***	(0.0000)***	(0.0000***)
O		-0.007511		-0.006354
		(0.0000)***		(0.0000)***
Constant			0.630242	0.3765
			(-0.0016)**	(0.0000)***
Observations	128	128	159	307
Number of groups	5	5	12	12
R 2	0.9754	0.9944	0.7154	0.8892

Note: p-values are in brackets and ***indicates significant at 1% level, **indicates significant at 5% level and *indicates significant at 10% level. All data is expressed in natural logarithms except for data with negative values.

It might be more appropriate to administer a fully or partially integrated system: I.e. the CIT acts as a withholding tax of corporate-source income and is, in the absence of a preferential treatment of capital gains, credited in full at shareholder's level (providers of capital). A differentiation (and even discrimination) between retained (corporate profits) and distributed profits (dividends) is also common in the SADC region. Corporate taxation may also involve a double taxation problem (classical system). Corporate profits are taxed in the hands of the corporation (CIT), but also on shareholders (PIT on dividends). Each SADC member deals with the problem of double taxation differently.

In the SADC region where withholding tax rates (from 5 to 25 per cent, depending on the type of income involved) are still of utmost importance and double taxation agreements are rare or non-existent (South Africa has the most extensive list of them all), it is not surprising that a strong negative relationship is present in terms of CIT rates: This could mean that these countries need to adjust their CIT rates downwards when withholding tax rates move in the opposite direction. Some double taxation agreements already exist to make provisions for credits on double taxation. Another variable that is also related in this context, is the dummy variable that considers whether the country is on a source or residence (SR) system, which is significant and points to the sensitivity in terms of CIT rates.

The government expenditure-to-GDP ratio is negatively related, with the CIT rate in the pooled estimation (columns 1, 2 & 4). Though it becomes positive in the SADC region, where only local variables are used, it becomes negative as soon as the openness variable is added: This is to be expected, for the higher the spending, the more pressure there is on the CIT rates to become more competitive in terms of capital income tax systems. Only variables for which the data was available were included in this study.

The presence-of-trade variable (O) is determined as follows: [Exports (X)/Gross Domestic Product (GDP) + Imports (Z)/Gross Domestic Expenditure (GDE)]/2. It partly gives an indication of trade openness in the region. This variable is negatively associated with the CIT rate both for the pooled and fixed effects estimators, where all international variables are present. This result could be indicative of lower CIT rates with higher trade ratios and therefore international pressure to lower the CIT rates; it should be read with caution, as other factors also play a definite role in terms of a country's openness.

Various other variables were also sourced, such as population, which showed that an increase in the population still leads to decreased CIT rates.

From Table 1 it appears that there has been some pressure in the region to cut CIT statutory rates since 1985, with more urgency between 2005 to 2015, potentially indicating the possibility of strategic action and some tax competition.

5.6 Tax coordination not equally important in all countries

"For the countries that have large economies, good infrastructure, natural resources and attractive non-tax related FDI determinants, the case for tax harmonisation does not appear to be overwhelming. However, for countries that have small economies, poor infrastructure, relatively low levels of natural resources and less attractive non-tax related FDI determinants, the merits for tax policy harmonisation may be more appealing" (Ade et al. 2018); as can be observed from the SACU agreement, with smaller economies following the leader, which in this case is South Africa.

From the study, it appears that tax policies take precedence over public needs and as such, external competitive pressure determines CIT rates. This can also be seen from a country such as South Africa, where most of the tax revenue collected is derived from personal income taxation and not corporate income taxation. Emerging and/or developing regions thus tend to under-tax capital, specifically the more elastic capital outflows. Even Adam Smith (1776) acknowledged that capital has never been the "citizen of any country". Tax havens[2] have become a familiar sight in order to avoid current & future taxes, and exchange controls. Whereas the OECD and the EU lend credence to the claim of "harmful preferential tax regimes" and attempt to "blacklist" these countries, Tanzi (1995) suggests the establishment of a World Tax Organisation to deal with global tax harmonisation issues.

[2] Ginsberg (1991: 15) provides a full account of taxation relief categories such as tax exemption (tax paradises or "no tax" havens), low taxation (tax shelters), special incentive privileges, tax exemption for manufacturing & processing of exports, and international CIT-reduction

Countries do not appear to give much attention to their own macroeconomic environment when determining their statutory corporate tax rates. This is represented by the low level of significance of the country-specific determinants. The only effect that shows consistent significance is the effect of the personal income tax rate as previously indicated. indicating governments appear to use the corporate income tax more as a backstop to the personal income tax. Other than this backstop effect, no consistently significant country-specific determinants were found. Indeed, corporate tax rates do not appear to be geared towards the spending behaviour of governments, as indicated by research conducted by Slemrod (2004). Moreover, the effect size can be contested: I.e. even when not including the strategic interaction variable, it is only marginally significant.

6 Concluding remarks

In this paper, a cross-section panel (pooled and SUR analysis) was utilised to find the factors that best explain changes in corporate taxes over time. The outcome of low taxes, that is higher levels of capital investment, has long been questioned in literature. The main question is whether governments in developing countries, such as those in the SADC region, set their public needs first over everything else, including over inefficient tax policies that might generate uncertain revenues? If so, is it the internal public needs that determine corporate income taxes (CIT), or external competitive pressures (as part of a globalised environment)?

As noted, it is widely accepted that tax competition could have an array of consequences or outcomes. Competition in this context might lead to a natural process of tax rate convergence and thus a limitation on the growth of governments. On the opposing side of the spectrum, it might lead to under-taxation and consequently an under-supply of government services and thus a "dilemma". It is therefore essential to investigate whether this convergence, also in a macroeconomic sense, has been taking place and what the future outcome may hold for SADC. In order to find a calculated outcome, it is essential to summarise the empirical results of the paper.

The main findings in this paper have delivered interesting results:

The first of which observes that the backstop scenario is applicable both in terms of the average and statutory CIT rate. Here it makes perfect sense to accept that in countries with a higher PIT rate, the statutory CIT rate will also be higher, and that these countries will raise more CIT revenues when PIT rates increase, due to the direct link between the two rates (the differentiation between labour and business income with income linked to the GDP). Further, the PITNOCAP variable is negatively related to the statutory rate, which means that if the capital gains tax rate increases, the CIT rate will decline.

Secondly, in terms of the government expenditure variable (GOVEXP), the reality of strategic action in terms of tax competition becomes clear no matter what the level of government expenditure. The government expenditure variable is negatively related to the statutory rate, where local and international variables are in place. It seems that tax competition prevails no matter the level of government expenditure.

Thirdly, in the SADC region where withholding tax rates are still of utmost importance, it is not surprising that a strong negative relationship is present in terms of the statutory CIT rates. This could mean that these countries need to adjust their CIT rates downwards when withholding tax rates move in the opposite direction. The dummy variable for statutory rates (SR) becomes relevant in this context.

The fourth point is that the presence of trade variable (O) is negatively associated with the statutory CIT rate, where all international variables are present. Although this result could be indicative of lower CIT rates with higher trade ratios and therefore international pressure to lower the CIT rates, it should be read with caution because other factors may also play a definite role. This also tends to confirm the region's dependency on trade for tax revenues, especially in terms of the SACU region

and its relationship with South Africa. Again, this is not an isolated issue and should also be seen in the light of capital mobility and the degree of doing business in the region.

The analysis in this paper is not final. This could mean that countries are pressurised into following competitive regimes when determining the statutory CIT rate as part of a globalised tax environment. Note should be taken of the fact that multinational companies tend to shift profits to tax havens no matter the levels of corporate tax rates. More pressure is then put on the personal income tax base that needs to cover public expenditure needs. With South Africa the so-called Stackelberg leader, the importance of sustainable economic growth needs to be emphasised. Burger (2019: 364) emphasises the need in South Africa for a partnership between business, labour, public interest groups and citizens including the poor, to bring about much needed reform, excluding corruption. Economic growth in South Africa results in economic wealth for Southern Africa and viable taxation bases for the future.

Limitations of the study

This research is not without its limitations. Firstly, this paper focuses on the determinants of corporate tax rates and not on corporate tax bases or revenues. As previously mentioned, competition using tax bases is possible; though sourcing suitable data for review of this is very difficult, as tax laws regarding tax bases can be very complex and opaque. There are of course many other considerations countries weigh when competing with others: These may include trade balances, the legal environment to set up corporations in relation to each other, historical ties between two countries, a common language to name a few. Future research could attempt to address some of these additional factors as a more comprehensive analysis.

Implications

This paper re-emphasises the importance of international pressure in terms of future tax policymaking. At the same time, it emphasises governments' abilities to raise taxes and thus deliver services in future. Tax co-operation or harmonisation might become the preferred route in the SADC region in order to ensure its attractiveness as an investment destination, realising full benefit from future initiatives concerning regional integration efforts or schemes. A careful review of future tax measures and strategies by the SADC tax-subcommittee has become essential to ensure fiscal sustainability and all importantly, macroeconomic stability increasing programmes such as NEPAD.

A fine balance between domestic public needs and external competitive pressures will therefore have to be maintained in future tax policies. The main question is whether governments in developing countries, such as those in the SADC region, set their public needs over everything else first, including those inefficient tax policies that might generate uncertain revenues? If so, is it the internal public needs that determine corporate income taxes (CIT) or external competitive pressures (as part of a globalised environment)?

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