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ESTIMATING TAX EFFORT IN SELECTED AFRICAN COUNTRIES. CASE OF SOUTH AFRICA AND MAURITIUS

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Abstract: *Tax revenue plays a significant role in financing public needs, and Countries collecting less than 15% of GDP in taxes must increase their revenue collection in order to meet basic needs of citizens and businesses. This level of taxation is an important tipping point to make a state viable and put it on a path to growth. However; a good number of countries in Sub-Saharan Africa have a tax to GDP below 15% due mainly to structural limitations of their economies and inefficiencies in tax administration. This study intended to analyze tax ratios in South Africa and Mauritius, estimate their tax effort and analyze the factors accounting for differences in their tax to GDP ratios. To achieve these objectives, the study used the feasible FGLS-SUR (period SUR Weights) as a method of data analysis to estimate the panel model covering a period from 1970 to 2019 and estimated coefficients stands for average tax rates. The minimum tax effort in South Africa was 29.8% with a maximum of 47.01% whereas in Mauritius the minimum tax effort was estimated to be 16.9% and the maximum estimated to 38.7%. Tax effort is high in South Africa compared to Mauritius and factors accounting for these differences include the economic structure of their economies, levels of tax compliance among taxpayers and use of technology in detecting and addressing noncompliance. The study findings indicate that there is a room for improvement in mobilizing tax revenues in selected countries and future research should include behavioral factors to check at what extent noncompliance affects tax revenue mobilization in both countries.*

Keywords: *Tax ratio, Tax efforts and Tax capacity*

1. BACKGROUND

Taxes are an important source of revenue for most countries (Bird, 2007). In fact, taxes provide the main source of government funds in almost every country in the world. Since countries' populations and economies differ greatly, measuring total tax revenue is not the best way to compare international tax systems. Instead, using a tax-to-GDP ratio is one of the more useful ways to compare tax systems around the world (Ben, 2015).

Total tax revenue as a percentage of GDP indicates the share of a country's output that is collected by the government through taxes. It can be regarded as one measure of the degree to which the government controls the economy's resources (Bird, 2007). It is argued that some of the reasons why developing countries experience ballooning budget deficit is because they have small and few sources of tax revenue that are susceptible to shocks. These sources include import and export taxes on agricultural and mineral products whose prices are determined internationally and therefore tend to be unstable. In addition, some countries had sales tax that was narrow based (Wawire, 2017).

The tax-to-GDP ratio compares a country's tax revenue to the size of its economy, which in this case is measured by its GDP. The higher the ratio, the higher the proportion of money that goes to government coffers (Bird et al, 2004). If managed effectively, this can support the long-term health and prosperity of an economy.

According to research conducted by the International Monetary Fund, countries should have a tax-to-GDP ratio of at least 12% in order to experience accelerated economic growth. The countries that are part of the Organisation for Economic Co-operation and Development (OECD) all meet that threshold, with an average tax-to-GDP ratio of **33.8%**. Tax revenues are closely related to economic activity, rising during periods of faster economic growth and declining during recessions. As a percentage, tax revenues generally rise and fall faster than GDP, but the ratio should stay relatively consistent barring extreme swings in growth OECD (2021).

Many countries are still struggling to collect sufficient revenues to finance their own development**.** Countries collecting less than 15% of GDP in taxes must increase their revenue collection in order to meet basic needs of citizens and businesses (Gauthier and Ritva 2006). This level of taxation is an important tipping point to make a state viable and put it on a path to growth.

2. ECONOMIC AND TAX STRUCTURE IN SELECTED COUNTRIES

2.1. Overview of Economic Structure for South Africa and Mauritius

Most of African countries' economic output are characterized by the significant share of agriculture value addition in total GDP followed by service sector value addition and industrial sector' output not developed enough to improve their levels of exports. Over the period studied, that is, from 1976 to 2019 the service sector value addition in GDP is the highest, in average accounting for 62.8% and 62% for South Africa and Mauritius respectively. Industry sector is the second largest sector with a share of 25.6% and 21.6% in the GDP respectively for South Africa and Mauritius, whereas the agriculture comes at the last position with a share of 2.4% of GDP in South Africa and 4.5% of GDP in Mauritius.

Tax revenue structure differ much significantly across these two countries. Revenue statistics report of OECD (2021) indicates that in 2019, tax revenues are dominated by direct taxes in South Africa compared to Mauritius. Next section points out the details of indirect and direct taxes in the above selected countries.

2.2. South Africa Tax Structure

According to OECD (2021) revenue statistics report indicates that tax revenues in South Africa in 2019, mainly come from direct taxes (income and profits) accounting for 51.1% whereas the indirect taxes (taxes on goods and services) account for 40%. One should notice that, tax revenue structure in South Africa differs significantly of the one of other African countries, because the same source of information indicates that the average of 30 African countries, indirect taxes account for 51.9% whereas the share of direct taxes in total revenues accounts for 38.4%.

Income tax in South Africa was first introduced in 1914 with the introduction of the *Income Tax Act No 28*, an act that had its origins in the New South Wales Act of 1895. The act has gone through numerous amendments with the act presently in force is the *Income Tax Act No 58* of 1962 which contains provisions for four different types of income tax. These four types of tax are normal tax, donations tax, secondary tax on companies and withholding tax. South Africa uses a residence-based taxation system whereby residents are taxed on worldwide income and non-residents are taxed on South African-sourced income. With 23.9 million of its 59 million strong population paying taxes, most of the state's income comes from personal and corporate tax as

main source of revenues as shown above. Indirect taxes, though, such as Value-Added Tax do account for nearly a third of the government's coffers.

The South African government levies a series of direct taxes on citizens and companies operating in South Africa. These include income and business taxes, capital gains, and inheritance taxes. Indirect taxes such as Value-Added Tax (VAT) and Fuel Duty also apply, as well as contributions towards social security in South Africa.

VAT in South Africa is levied on the consumption of goods and services. The VAT rate in South Africa is currently 15% on most goods and services and on imported goods, though there are some exceptions, for example some financial services.

Businesses are responsible for paying VAT to the government but they can pass on this charge to their customers or clients by adding VAT to the cost of invoiced goods and services. Businesses must register for VAT in South Africa if their annual turnover exceeds R1 million within a 12-month period.

According to the latest World Development Indicators, tax revenue (% of GDP) in South Africa has shown a steady increase from 1972 to 2019 with some significant fluctuations. Central government revenues come primarily from income tax, value added tax (VAT) and corporation tax. Local government revenues come primarily from grants from central government funds and municipal rates.

In 2018/19 financial year, South Africa had a tax-to-GDP ratio of 26.2% that was only slightly more than the 25.9% in 2017/18. The cost of collecting tax revenue has remained somewhat constant; decreasing slightly from 0.93% of total revenue in 2016/17 to 0.89% in 2017/18, while the 2018/19 financial year showed a further improvement in the cost of revenue collection, which dropped to 0.84%.

2.3. Mauritius Tax Structure

Tax revenue statistics report, OECD (2021) reveals that the big share in total revenues is made of indirect taxes (taxes on goods and services) accounting for 63.6%, whereas the direct taxes (taxes on income and profits) account for 26.9% of total revenues. Tax revenue structure in Mauritius follow the same trend with other African countries where as shown above, the big share of most African countries is made of indirect taxes.

In Mauritius, individuals, irrespective of nationality, deriving income from sources within Mauritius are subject to Mauritian income tax on all such income, whether or not they are resident. An income tax was first enacted in Mauritius in 1932 (Ordinance 21 of 1932, the Income Tax Ordinance), to come into force on 1 July 1933.

Ehram Court (2016) says that Mauritius runs a self-assessment system. A resident of Mauritius is taxable on worldwide income, except an individual whose foreign source income is taxable only if it is remitted to Mauritius. That is, income derived from outside Mauritius is taxable only to the extent that it is received in Mauritius. Income from employment duties performed in Mauritius is deemed to have been derived from Mauritius, even if the related remuneration is received outside Mauritius.

As of 1 July 2018, the tax rate of 15% was reduced to 10% on annual net income derived by an individual of up to 650,000 Mauritian rupees (MUR). Net income derived above MUR 650,000 will be taxed at 15%. As of 1 July 2018, the tax rate of 15% was reduced to 10% on annual net income derived by an individual of up to 650,000 Mauritian rupees (MUR). Net income derived above MUR 650,000 will be taxed at 15%.

3. OBJECTIVES OF THE STUDY

Objectives of the study in hand are the following:

i) To analyze tax GDP ratios in South Africa and Mauritius.

ii) To estimate tax effort in South Africa and Mauritius.

iii) To determine the factors accounting for the differences in tax GDP ratios in South Africa and Mauritius.

4. THEORETICAL LITERATURE

4.1 South Africa Tax to GDP Ratio

According to the World Bank, tax revenues above 15% of a country's GDP are a key ingredient for economic growth and, ultimately, poverty reduction. Higher tax revenues mean a country is able to spend more on improving infrastructure, health, and education – keys to the long-term prospects for a country's economy and people (Chen, et al, 2001).

"Thus, the higher the ratio, the higher the proportion of money that goes to government coffers; a low ratio puts pressure on a government to meet its fiscal deficit targets." South Africa's ratio is estimated to be 24.7% in 2021/22 expected to rise to 25% in 2024/25.

According to the Revenue Statistics in Africa 2019 (1990-2017) in 2017, the unweighted average tax-to-GDP ratio for the 26 countries in this publication (the "Africa (26) average") was 17.2%. The tax-to-GDP ratio refers to total tax revenue, including social security contributions, as a percentage of gross domestic product (GDP). The Africa (26) average was below the Latin America and the Caribbean (LAC) average of 22.8% and the OECD average of 34.2%. Tax-to-GDP ratios ranged from 5.7% in Nigeria to 31.5% in the Seychelles in 2017, with nearly three quarters of the countries falling between 11.0% and 22.0%. The tax-to-GDP ratio exceeded 22% in four countries (Morocco, Seychelles, South Africa and Tunisia).

Tax revenues increased by 1.5% of GDP on average between 2008 and 2017, thanks to increases in revenues from VAT (0.7 percentage points [p.p.]) and from taxes on income and profits (0.3 p.p.) driven entirely by a 0.7 p.p. increase in revenues from personal income taxes. The increase in the Africa (26) average tax-to-GDP ratio was higher than the increase for the LAC and the OECD averages (both 1.3 p.p.). The Africa (26) average has plateaued at 17.2% since 2015, with increases in tax-to-GDP ratios in some countries being offset by decreases in others (Chen, et al, 2001).

The greatest source of tax revenues among countries featured in this publication were taxes on goods and services, which accounted for 53.7% of total tax revenues on average in 2017, with VAT alone contributing 29.4%. Taxes on income and profits accounted for 36.2% of tax revenues. This was a similar tax structure to that of the average LAC country, except in relation to social security contributions: social security contributions as a proportion of GDP in LAC were more than twice the level seen in Africa.

Taxes on goods and services were the principal source of tax revenues for 21 countries in 2017, ranging from 36.6% of tax revenues in Tunisia to 78.5% in Togo. For the five other countries (Botswana, Equatorial Guinea, Eswatini, Nigeria and South Africa), taxes on income and profits accounted for the principal share of total tax revenue. The share of social security contributions in total tax revenue was highest in Tunisia (30.7% of total revenues), Morocco (19.3%) and Egypt (15.0%).

On average, in 2017 revenue from environmentally related taxes amounted to 1.3% of GDP in Africa, slightly lower than the OECD unweighted average of 1.6% of GDP (2016 figure) but higher than the LAC average of 0.9% of GDP. In 2017, tax revenues from energy products generated 70% of total environmentally related tax revenue on average, followed by revenues from motor vehicle and transport taxes.

4.2 Tax Revenue to GDP Ratio in Mauritius

Le Tuan et al., (2014) stated that tax revenue refers to compulsory transfers to the central government for public purposes. Certain compulsory transfers such as fines, penalties, and most social security contributions are excluded.

The highest share of tax revenues in Mauritius in 2019 was contributed by value added taxes (VAT) (34%). The highest tax to GDP ratio in Mauritius was registered in 2019, amounting to 19.9% resulting to good performance of taxes on goods and services. The low tax to GDP ratio in Mauritius compared to South Africa, may be explained by the structure of the economy as well as the structure of revenues.

4.3. Tax Efforts

According to Le Tuan, et al (2012), *"*Tax effort is defined as an index of the ratio between the share of the actual tax collection in gross domestic product and taxable capacity". The use of tax effort and actual tax collection benchmarks allows the ranking of countries into four different groups: low tax collection, low tax effort; high tax collection, high tax effort; low tax collection, high tax effort; and high tax collection, low tax effort, Le Tuan Minh, et al (2012). The analysis provides broad guidance for tax reforms in countries with various levels of taxable capacity and revenue intake*"*.

Tax effort is the extent to which actual tax revenue reaches estimated capacity, and is here expressed as a proportion (Ben, 2015). Such effort reflects a) policy choices and b) inefficiency in policy enforcement. Policy choices are expressed in tax rates and bases, and any exemptions. These policy choices reflect a variety of factors, including public preferences for the size of the state, and could well incorporate a deliberate decision not to aim for maximum possible tax collection at the top of a hypothetical Laffer curve. Le Tuan, et al (2008)Inefficiency in enforcement encompasses issues of tax administration, taxpayer compliance, and interactions between the two. As suggested by Alfirman (2003), effort is thus best considered as 'unused tax potential', and represents a composite measure of policy and enforcement factors.

Actual tax revenue as a share of GDP is one of the most commonly used measure of tax effort for cross country tax comparison. The biggest advantages of this measure are that it is easy to obtain and gives quick overview of tax trends across countries. But, as endorsed by Musgrave (1987), this measure is more suitable for studies focusing on countries that are close to each other in terms of economic characteristics and structures. Taxable capacity refers to the predicted tax-to-gross domestic product ratio that can be estimated empirically, taking into account a country's specific macroeconomic, demographic, and institutional features, which all change through time (Minh, 1994).

5. EMPIRICAL LITERATURE

Researchers have used different determinants of tax to GDP ratio, where initially the sectoral value addition of industrial development and the share of international trade in the economy were presumed to be the key determinants. Empirical studies have employed different determinants of tax burden, Tanzi (1981), Janet and Asegedech, (1997), Tuan et al; (2012), Ala and Ahmad, (2016), John, (2019). The study in hand has followed

the same procedure used by these other empirical works and has selected different tax bases including the share of agriculture, the share of manufacturing, the share of industry, share of service and the economy's openness in GDP.

Ala and Ahmad (2016) examined the tax capacity and effort and economic implications in Jordan by using their determinants: share of agriculture, share of mining, share of manufacturing, economy openness and share of consumption in GDP for the period from 1990 to 2014. The study revealed that agriculture was inversely related to tax burden whereas trade openness was positively related to tax burden. Wawire (2021), analyzed the effects of political risks factors on tax revenue in Kenya, the study indicated that there is a negative relationship between share of manufacturing in GDP with tax revenue, and a positive relationship between the shares of economy openness in GDP with tax revenues. John, (2019), estimated the taxable capacity, tax effort and tax burden for Ghana, using data from 1970 to 2015 and the study results indicated that there is a negative relationship between tax burden and the share of agriculture in GDP as expected from the economic theory. However; the study also revealed that there is a positive relationship between tax burden and the share of service sector in GDP.

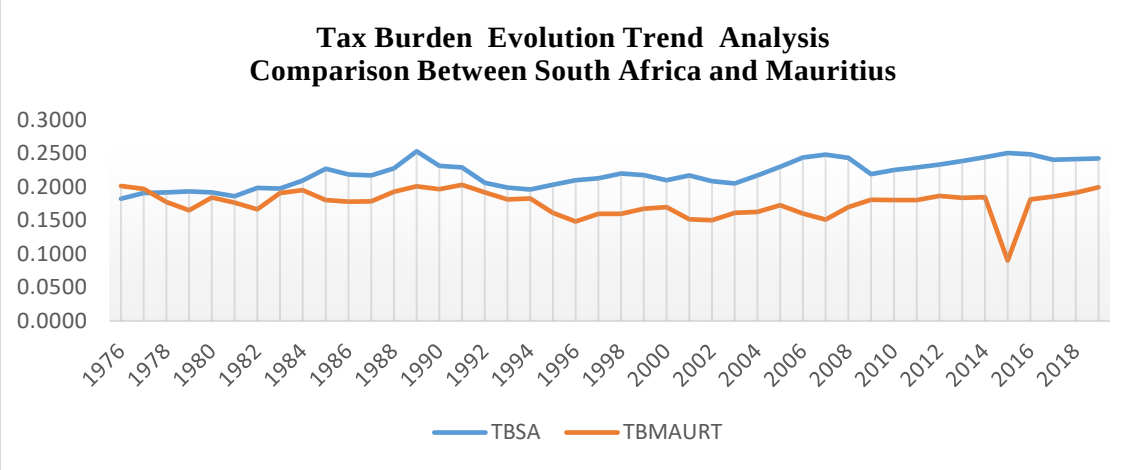
Tuan (2012) investigated the tax capacity and tax effort in 110 developing and developed countries during 1994 to 2009. The study has pointed out that trade openness share in GDP exhibited a positive relationship with tax burden, whereas the share of agriculture in GDP has a negative relationship with tax burden. It is worth to note that the lack of accuracy of data on variables of interest may affect the quality of estimated tax effort.

6. METHODOLOGY

6.1. Tax Burden Evolution Trend Analysis from 1976 to 2019

The graphical analysis of Tax Burden (TB) in South Africa and Mauritius shows that over the period studied, only in 1975 the TB in Mauritius was higher to the one of South Africa. Tax to GDP ratio depends on the structure of the economy, and according to the World Bank, tax revenues above 15% of a country's gross domestic product (GDP) are a key ingredient for economic growth and, ultimately, poverty reduction and this ratio is used with other metrics to determine how well a nation's government directs its economic resources via taxation

Graph no 1: Tax to GDP Ratios Evolution Trend in South Africa and Mauritius, 1976- 2019



Source: plotted using data from World Bank Database

The difference in tax to GDP ratios in South Africa and Mauritius may be explained by the structure of their economies. In South Africa, the share of agriculture in GDP is 2.4% whereas it is 4.5% in Mauritius for the entire period covered by this study. Studies have shown a negative relationship with agriculture and tax revenues, Ala and Ahmad (2016) hence South Africa having the lowest share of agriculture in GDP doesn't affect much negatively tax revenues compared to Mauritius. The share of service sector in total GDP was 62.8% and 62% respectively in South Africa and Mauritius. Finally, the industrial sector value addition in GDP was 25.6% and 21.6% respectively in South Africa and Mauritius. As the services sector growth is usually taken as an indicator for economic and social development, it is considered a good source for tax revenues and therefore, a positive relationship between service sector and tax burden is expected. In regards to the industrial sector value addition, it is expected to increase production and more exports leading to higher incomes, profits hence more revenues (Chen, et al, 2001).

On top of the structure of the economy, the difference between tax to GDP ratio across countries can be explained by the levels of tax compliance levels of taxpayers in their respective countries. The AFR Barometer on tax compliance indicate that a big number of taxpayers in South Africa (60%) of the respondents perceives non-compliance with tax obligations as a wrong doing whereas this number in Mauritius is 53%. In other words, taxpayers in Mauritius tolerate non-compliance which may affect negatively tax revenues paid. The same report indicates that, 85% of taxpayers compared to 66% in South Africa, confirmed that will refuse to pay taxes in case they are dissatisfied with government performance. As tax payment is considered as social contract between government and citizens, from the survey results one may conclude that may be the difference in tax to GDP ratios in the above countries is explained by the dissatisfaction of Mauritius taxpayers in Government's performance.

Lastly, the difference between tax to GDP ratios is that South Africa uses the latest technology in tax administration whereby The South African Revenue Service (SARS) is using computer algorithms, machine learning and other advanced technologies to ensure taxpayer compliance. The use of technology in compliance risk management impact positively revenue collections through change of behavior of taxpayers as a result of perception of high probability of detection by tax administration in case of non-compliance.

6.2. Estimating Tax Effort

The theoretical and empirical literature review have shown that previous studies have considered different regressors in order to determine the tax capacity for different countries. Some studies have considered individual countries, whereas others have used cross sectional data to estimate tax capacity for a group of countries. The following econometric model is considered to estimate the tax capacity for both countries:

TB = f (Agriratio, Manufactgdp, Industgdp, Servicgdp, Opengdp) …… **equat (1)**

Where: **TB:** is the tax burden

Agricgdp: is the share of agriculture in GDP

Manfacrati: is the share of manufacturing sector in GDP

Industratio: is the share of industrial sector in GDP

Serviceratio: is the share of service sector in GDP

Open: is the share of trade openness in GDP

The study has used cross sectional data covering the period from 1976 to 2019, and the data were extracted from World bank database. The study opted to use data of two countries, namely South Africa and Mauritius though data from many countries would be much better to estimate the tax capacity. These two countries are known as countries with modernized tax systems but with significant differences in the size of their economies. As an example, in 2019 the economy of South Africa was USD 351.4bn whereas for Mauritius, GDP was USD 14.05bn. However; in the same period, GDP per capita was USD 6,001.4 and USD 11,097.5 respectively in South Africa and Mauritius respectively.

The study in hand has adopted the estimation of tax capacity by regressing the tax burden on different proxy of tax bases mentioned above, where the estimated coefficients represent the average effective tax rates on these bases to obtain the tax capacity (Stotsky and Marium, 1997). The econometric model to be estimated is given by the following equation:

$$\mathbf{TB} = \beta 0i + \beta 1i\ Agricgdp_{it} + \beta 2i\ Manufactgdp_{it} + \beta 3i\ Industgdp_{it} + \beta 4i\ Opengdp_{it} + \beta 5i\ \ Servicgdp_{it} + e_{it}$$

..... **equat (2)**

The study used a sample of 88 (2 countries * 44 years) and adopted the estimation technique used by (Ala and Ahmad, 2016) in estimating tax effort of Jordan, where, they used the feasible FGLS-SUR (period SUR Weights) as a method of data analysis to estimate the equation 2 above.

Before estimating the tax capacity, the stability of the variables over time was checked by testing the unit root using Levin, Lin and Chu (LLC) test, and the results indicated that some variables are stationary at level, others stationary at first difference and others become stationary at second difference as follows (see annex 1):

Table 1: Unit Root Test Results

S/N	Variable Name	Level of Integration
1	TB	I (1)
2	Agriratio	I (0)
3	Industratio	I (1)
4	Serviceratio	I (1)
5	Open	I (1)
6	Manfacrati	I (2)

Source: analysis done by the authors

After checking the stability of the variables, the tax capacity for each country was estimated using Fixed Effect Model and the detailed results are reflected in the table below:

Table 2: Regression Results and Interpretation

Variable Name	Coefficients*	Std. Error	t-statistics	Prob
Constant	0.8392	0.041701	20.125	0.0000*
Agriratio	-0.7333	0.249697	-2.9370	0.0044*
Manfacrati	-0.4933	0.18568	-2.6567	0.0097*
Servratio	-0.5209	0.260123	-2.00287	0.0489**
Open	0.01446	0.02601	0.55610	0.579
Industratio	-0.5113	0.27344	-1.8	0.0655***
TB (-1)	-0.7307	0.0712	-10.253	0.0000*
Agriratio (-1)	-0.1491	0.1891	-0.7882	0.4331
Manfacrati (-1)	-0.1744	0.0547	-3.1882	0.0021*
Servratio (-1)	-0.7716	0.0625	-12.3383	0.0000*

Industratio (-1)	-0.6984	0.05761	-12.1226	0.0000*
Open (-1)	0.01352	0.01624	0.8327	0.4077
R^2	0.4582			
Adj. R^2	0.3691			
D-W	2.0			
F-Statistics	5.145783			
Prob. F-statistics	0.000004			

* Coefficients are significant at 1%, **significant at 5% and *** significant at 10%

The above results indicates that for agriculture, the findings are consistent with the findings of previous studies, Leuthold (1991), Ala and Ahmad (2016) where this sector has a negative relationship with the tax capacity. Variables such as manufacturing display a negative relationship with tax capacity, Jude and Peter (2019) whereas industry and service sectors equally display a negative relationship with tax capacity. Though a positive relationship was expected between these sectors with the tax capacity, the negative relationship might be due to different tax incentives and tax expenditures provided for in tax laws in use in these countries like it is the case in most Sub-Saharan African countries.

6.2.1. Estimated Tax Capacity for Mauritius and South Africa

Based on the estimated effective tax rates above, tax capacity of each country under the analysis was estimated and detailed results are indicated in (annex no 2). The results reveal that for Mauritius, the mean tax capacity was estimated to 54.9%, with a minimum of 51% and a maximum of 58.1% for the period covered by this study. In South Africa, the mean tax effort was estimated to be 57.1% with a minimum of 53% and a maximum of 61%.

From the estimated tax capacity for both countries, one can derive the tax effort and results are presented in table no 3 and no 4 next page:

Table no 3: Estimated Tax Effort in Mauritius

YEAR	TAX BURDEN	TAX CAPACITY	TAX EFFORT
1976	0.2012	0.5665	0.3552
1977	0.1972	0.5540	0.3559
1978	0.1773	0.5504	0.3221
1979	0.1650	0.5396	0.3058
1980	0.1841	0.5259	0.3502
1981	0.1764	0.5370	0.3285
1982	0.1666	0.5356	0.3111
1983	0.1909	0.5196	0.3674
1984	0.1952	0.5348	0.3649
1985	0.1801	0.5440	0.3310
1986	0.1778	0.5546	0.3206
1987	0.1781	0.5688	0.3132
1988	0.1927	0.5661	0.3403
1989	0.2009	0.5666	0.3546
1990	0.1965	0.5629	0.3491
1991	0.2029	0.5621	0.3610
1992	0.1915	0.5676	0.3374
1993	0.1810	0.5626	0.3217
1994	0.1828	0.5665	0.3227
1995	0.1611	0.5781	0.2788

1996	0.1481	0.5817	0.2546
1997	0.1599	0.5760	0.2777
1998	0.1599	0.5750	0.2781
1999	0.1675	0.5604	0.2989
2000	0.1695	0.5630	0.3011
2001	0.1514	0.5729	0.2643
2002	0.1501	0.5615	0.2672
2003	0.1610	0.5542	0.2904
2004	0.1624	0.5489	0.2959
2005	0.1726	0.5488	0.3145
2006	0.1603	0.5497	0.2916
2007	0.1511	0.5454	0.2770
2008	0.1697	0.5450	0.3113
2009	0.1807	0.5449	0.3317
2010	0.1802	0.5382	0.3347
2011	0.1800	0.5345	0.3369
2012	0.1862	0.5319	0.3501
2013	0.1837	0.5333	0.3444
2014	0.1847	0.5337	0.3460
2015	0.0899	0.5305	0.1695
2016	0.1813	0.5278	0.3435
2017	0.1855	0.5215	0.3556

2018	0.1912	0.5166	0.3702
2019	0.1995	0.5152	0.3871

Source: computed by the authors

Table no 4: Estimated Tax Effort in South Africa

YEAR	TAX BURDEN	TAX CAPACITY	TAX EFFORT
1976	0.18226	0.6108	0.2984
1977	0.19087	0.5989	0.3187
1978	0.19147	0.5942	0.3222
1979	0.19300	0.5957	0.3240
1980	0.19176	0.5992	0.3200
1981	0.18598	0.6085	0.3056
1982	0.19857	0.5979	0.3321
1983	0.19755	0.5969	0.3310
1984	0.20959	0.5922	0.3539
1985	0.22707	0.5855	0.3878
1986	0.21855	0.5852	0.3735
1987	0.21695	0.5893	0.3682
1988	0.22765	0.5866	0.3881
1989	0.25302	0.5842	0.4331
1990	0.23112	0.5859	0.3945
1991	0.22904	0.5862	0.3907
1992	0.20622	0.5858	0.3520

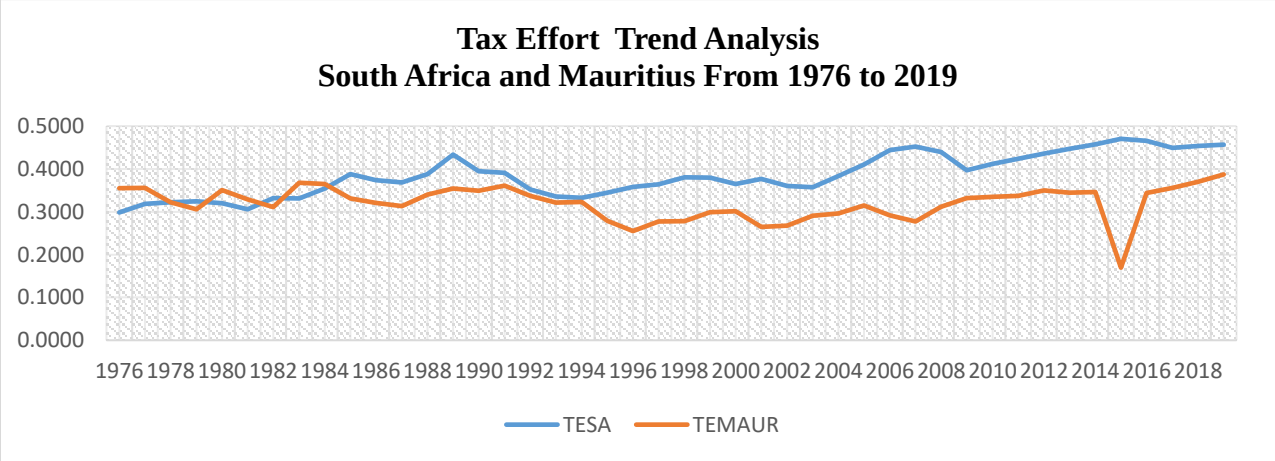
1993	0.19869	0.5918	0.3358
1994	0.19604	0.5888	0.3330
1995	0.20296	0.5888	0.3447
1996	0.20985	0.5857	0.3583
1997	0.21250	0.5834	0.3642
1998	0.21964	0.5777	0.3802
1999	0.21760	0.5729	0.3798
2000	0.20976	0.5752	0.3647
2001	0.21701	0.5764	0.3765
2002	0.20825	0.5775	0.3606
2003	0.20493	0.5735	0.3573
2004	0.21699	0.5660	0.3834
2005	0.22972	0.5597	0.4105
2006	0.24378	0.5492	0.4439
2007	0.24807	0.5490	0.4518
2008	0.24323	0.5535	0.4394
2009	0.21895	0.5516	0.3969
2010	0.22521	0.5474	0.4114
2011	0.22884	0.5400	0.4238
2012	0.23346	0.5355	0.4360
2013	0.23831	0.5337	0.4465
2014	0.24432	0.5342	0.4573

2015	0.25049	0.5327	0.4702
2016	0.24828	0.5332	0.4657
2017	0.24036	0.5352	0.4491
2018	0.24119	0.5319	0.4535
2019	0.24219	0.5304	0.4566

Source: computed by the authors

Tables above indicate that the mean tax effort is high in South Africa estimated to 38.5% against 32% in Mauritius for the period running from 1976 to 2019. The minimum tax effort in South Africa was 29.8% with a maximum of 47.01% whereas in Mauritius the minimum tax effort was estimated to be 16.9% and the maximum estimated to 38.7%.

Graph no 2: Tax Effort Trend Analysis in South Africa and Mauritius



Source: plotted using data from World Bank Database

The graph no 2 above indicates that from 1976 to 1983, there was no clear difference between tax effort in both countries. As one might see on the graph, in 1976, tax effort was high in Mauritius compared to South Africa. However; since 1985 to 2019, tax effort was very high in South Africa in comparison with Mauritius. The highest gap in tax effort between these two countries was registered in 2007. In same angle, one may notice that since 2017 onwards, the gap between tax efforts in both countries reduces and converge in positive increment.

As elaborated on under section 6.1 in previous pages, the same factors accounted for the differences between tax ratios (tax burden) among South Africa and Mauritius also hold for difference observed in tax effort. Those factors include: the economic structure of their economies, levels of tax compliance among taxpayers and use of technology in detecting and addressing noncompliance.

7. CONCLUSION AND RECOMMENDATIONS

Domestic revenue mobilization remains a key priority for African countries to achieve the Sustainable Development Goals. Though tremendous efforts were made in this area, still there are policy and administrative measures that could be taken by countries to boost their tax revenues. Though tax effort is high in South Africa compared to Mauritius with an average of 38.5 percent and 32 percent for South Africa and Mauritius respectively, there is a room for improvement. Structural factors affecting tax revenues may take some time to be adjusted to have greater impact on revenue mobilization as they dictate new tax policy design and sometimes cumbersome approval process. Countries should invest significantly in improvement of tax administration, to improve efficiency and reducing compliance costs. Future studies may include behavioral factors to check at what extent noncompliance affects tax revenue mobilization in both countries.

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