# OUTA
## ORGANISATION UNDOING TAX ABUSE

**October 2018**

# Taxation Ceiling for South Africa

**Motivation to curb taxation and proposals for reduced Government expenditure and demand on tax revenue**

**Compiled by OUTA**

**Input and support from Econometrix**

# Report:

**Taxation ceiling for South Africa & the implications of the Laffer curve**

**September 2018**

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# 1    Introduction

This paper explores a taxation ceiling for South Africa and the implications of the Laffer curve.

The next section provides background to the Laffer curve.  This is followed by background data in sections 3 and empirical results in section 4 that show how tax revenue as a percentage of GDP has increased over time and how this is affecting real tax revenue. Section 5 presents the trade-off between economic growth and higher tax rates. Data is presented in section 6 that compares government compensation of employees to other sectors in the economy and asks the question if South Africans are receiving value from their taxes paid. Section 7 concludes.


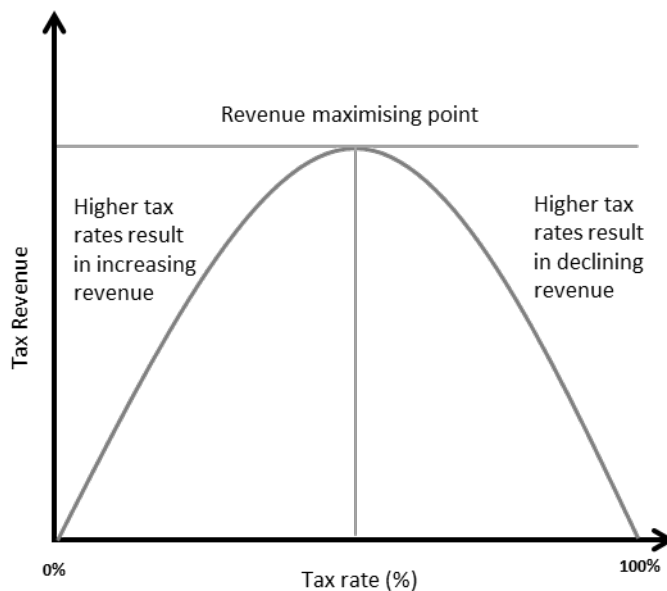# 2    Background of the Laffer curve

The Laffer curve illustrates a theoretical relationship between rates of taxation and the resulting levels of government revenue. The Laffer curve assumes that no tax revenue is raised at the extreme tax rates of 0% and 100% and that there is a rate between 0% and 100% that maximises government taxation revenue. In other terms, if tax rates are increased above a certain level, tax revenue can actually fall.

This is a very important implication for tax policy and implies that increasing tax rates beyond a certain point is counter-productive for raising further tax revenue. For example if personal income tax is raised too much, it can discourage people from working, if VAT or import taxes are increased too much, it can results in lower levels of consumption expenditure and if corporates are taxed too much, big corporates can move to other countries (or shift their tax responsibility to other countries). It can discourage entrepreneurs from starting new business or hold back small business from growing into medium or large business. In the end, economic growth is lower and fewer jobs are created.

The Laffer curve is typically represented as a graph that starts at 0% tax with zero revenue; it rises to a maximum rate of revenue at an intermediate rate of taxation, and then falls again to zero revenue at a 100% tax rate. Only a hypothetical Laffer curve can be estimated for any given economy and even such estimates are controversial.

The graph below illustrates this theoretical concept.

**Figure 1: Laffer curve**



The Laffer curve became important in the US in the 1980s because it gives an economic justification to cutting income tax rates. For politicians, such as Ronald Reagan the Laffer curve became attractive because it appears to give the best of both worlds, lower tax rates (which are politically popular) and increase tax revenues. These are the same thoughts behind recent tax cuts by the Trump administration[1].

According to Laffer (2004), changes in tax rates affect government revenues in two ways. One is immediate where tax cuts translates directly to less government revenue (the 'arithmetic effect'), and the other is a longer-term effect (described as the 'economic effect') that works in the opposite direction. Lower tax rates put more money into the hands of taxpayers, who spend it. This creates more business activity to meet consumer demand. Companies hire for example more workers that result in additional spending and taxes being paid. This boost in economic growth generates a larger tax base and eventually replaces any revenue lost from the tax cuts (also see Amadeo, K, 2018).

## 2.1   The Laffer curve in the real world

It can be difficult to measure the impacts of tax cuts because of several 'real world' factors that influence tax revenue. This include for example:

- In a period of globalisation there is greater tax competition between countries and it is easier for multinationals to move operations to other countries.
- There are various other economic factors at play at any given period, like higher or lower commodity prices, higher or lower periods of international growth, droughts, strike action etc. that, apart from the tax rate, can affect tax revenue.
- Actual data is not available on for example personal income tax rates at say 60% and 70% to explore the impact of such rates on tax revenue.
- There isn't just one Laffer curve for a country. Detail studies can be performed per tax type given that each tax type will have its own Laffer curve. For example, when researching personal income tax, it needs to examine whether tax rates at different tax brackets have an

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[1] See for example: NY times, 2017. Arthur Laffer's Theory on Tax Cuts Comes to Life Once More. https://www.nytimes.com/2017/04/25/us/politics/white-house-economic-policy-arthur-laffer.html

impact on labour supply at different income levels. A number of other factors must also be taken into account, for example a larger a growing population and a labour force are expected to result in higher tax revenues.

- The size of the informal and illicit markets as well as the level of law enforcement is important. This can for example include law enforcement in the illicit tobacco markets - if an excise tax that are too high and law enforcement is poor, increases in excise taxes can result in a loss in revenue, but a shift to the illicit tobacco market.
- Changes in, for example, corporate tax structures can be accompanied by different tax or investment incentives (or disincentives – like poor policies) that may influence the total revenue.
- The effect of the changes in tax rates are complicated by time lags. In the short-term workers may for example be stuck to contracts and notice periods. But in the long-run changes in tax rates can for example encourage people to set of their own businesses, or it may influence where people want to live and work. High net worth individuals could for example move if the taxes they are paying are increasing vs the benefits that they are receiving and this could impact the overall tax collection.

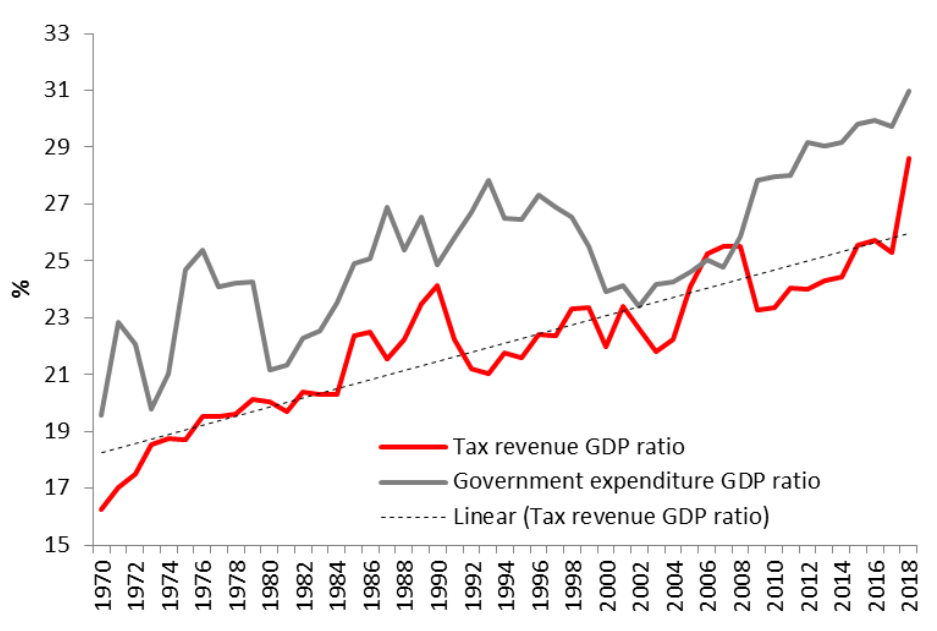## 2.2   An optimal tax to GDP ratio in SA – literature review

Schoeman *et al.* (2009) researched the optimum rate of tax revenue policies what would facilitate the full growth potential of the SA economy between the period 1960 and 2007. They concluded that the results indicate that the actual average tax burden exceeds its optimum level and that the authorities will have to consider adjusting tax policy accordingly in order to improve the growth performance of the economy.  According to their model, the optimum tax to GDP ratio for the SA economy is 18.5%. However, it was already 26% in 2007 and South African Reserve Bank (SARB) data shows that it increased to over 28% in 2018.

According to Schoeman *et al*. (2009), the optimum rate calculated is consistent with findings of Scully (2000) with rates between 19% and 23% for the United States and New Zealand respectively. It is also consistent with the findings of Mavrov (2007) in Bulgaria with an optimum ratio of 21.4% for government expenditure as a percentage of GDP.  Schoeman *et al.* (2009) conclude that the tax burden has a negative impact on economic growth and as part of tax reform; policy makers should consider the adjustment of tax rates to the optimum level (should borrowing not be an option).

## 3   Data – tax as a percentage of GDP and GDP growth vs tax revenue

Figure 2 shows how the total tax as a percentage of GDP and government expenditure as a percentage of GDP has increased since 1970. Tax revenue as a percentage of GDP was according to data from the SARB, just over 16.2% in 1969/1970, but has increased to 28.6% in the 2017/2018 financial year.
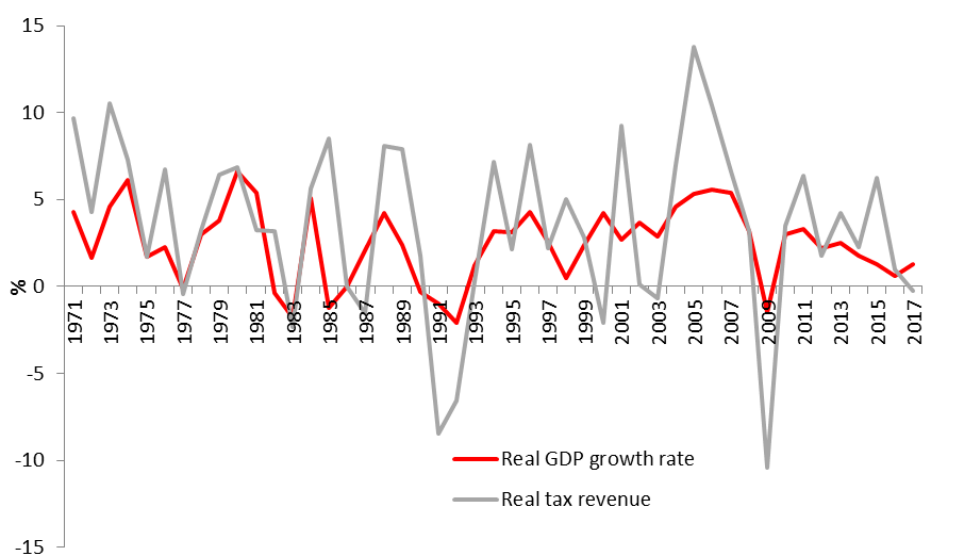
**Figure 2: Total tax revenue as percentage of GDP and government expenditure as a percentage of GDP in SA from 1970 till most recent (financial year)**



Source: Own graph based on SARB data

The relationship between real economic growth and the growth in real tax revenue[2] is shown in the graph below. Regression analysis shows that over the period 1971 to 2017, for every 1 percentage point increase in the GDP growth, the growth in the tax revenue increases with 1.43 percentage points. The relative larger coefficient with respect to tax revenue is mainly due to an increase in the tax burden. The question is: how far can the tax burden be increased?

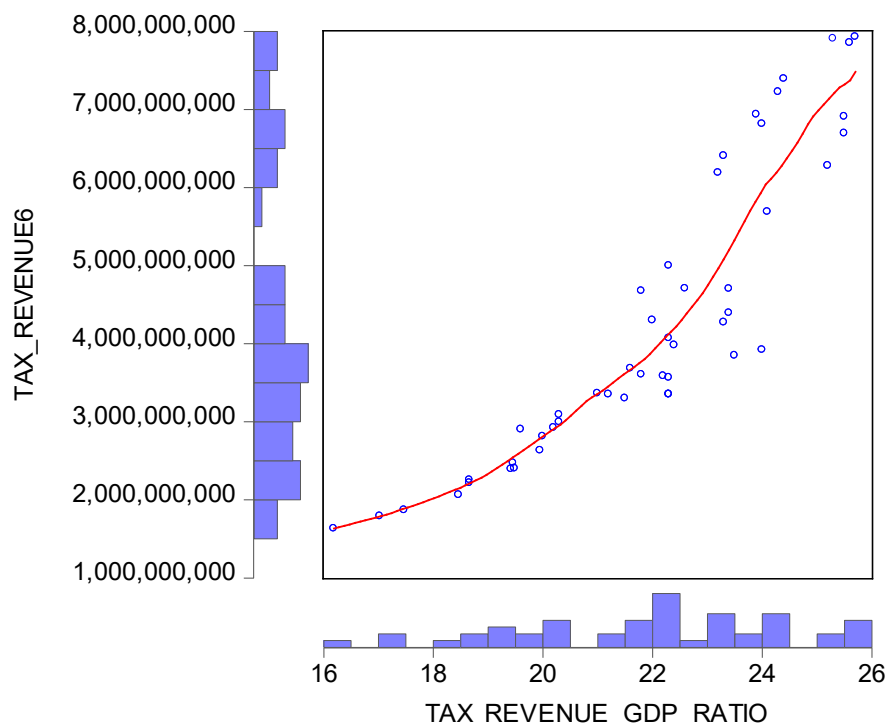**Figure 3: Relationship between real economic growth and real tax revenue (1971 to 2017)**



Source: Own graph based on SARB data

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[2] Real tax revenue is calculated using the nominal tax revenue and GDP deflator.

# 4   Empirical results

Figure 4 presents the relationship between the real tax revenue and tax revenue as a percentage of GDP that can be used as a proxy for the Laffer curve. The graph shows a steeper increase in the real tax revenue during periods when the tax revenue as a percentage GDP was between 20% and 24%, compared to period when it was below 20% and above 24%. From this analysis is seems as if a range of tax revenue to GDP of between 20% to 24% results in higher real tax revenue and this would imply that the current taxes (resulting in a revenue to GDP percentage of 28.6%) are too high. This is also expected to result in lower economic growth as the higher taxes reduce disposable income of consumers and firms. This relationship will be explored in the next section.

**Figure 4: Relationship between real tax revenues and tax revenue as a percentage of GDP (1971 to 2017)**



Source: Own estimation

Table 1 shows regression results for different periods between real[3] tax revenue and tax as a percentage of GDP. The tax as a percentage to GDP is used as a proxy for the overall tax burden on the economy.

The equations are estimated in semi-log format so that the results can be interpreted in terms of percentage point increase (i.e. the percentage increase in the real tax revenue for every percentage point increase in tax revenue as a percentage of GDP; this is for example if tax revenue as a percentage of GDP increase from 20% to 21%, or from 21% to 22% etc.).

Over the period 1990 to 2017 a 1 percentage point increase in tax as a percentage of GDP, resulted in a 0.18% increase in the real tax revenue. However, this has been reduced to 0.08% over the period 2008 to 2017, to 0.07% over the period 2012 to 2017 and to only 0.05% over the period 2014 to 2017. This coefficient is expected to keep on decreasing and could potentially be negative as the tax burden as a percentage of GDP keeps on increasing. This can be interpreted that, although real revenue is still increasing given the increases in the tax burden, the rate of such an increase is

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[3] Real values are used to remove the impact of inflation.

slowing down. In other words, SA is fast approaching the tipping point of the Laffer curve where a larger tax burden will result in decreasing real tax revenue.

**Table 1: Regression analysis over different periods; dependent variable is real tax revenue, independent variable is tax revenue as percentage of GDP**
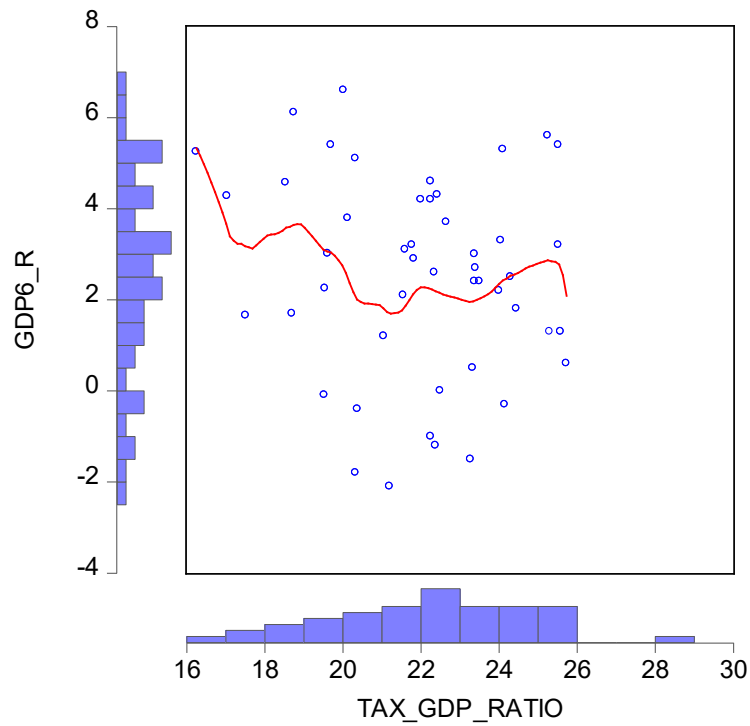
| Period | Semi-log | |
| --- | --- | --- |
| | Coefficient* | Adjusted $R^2$ |
| **1970 - 2017** | 0.172 | 0.9 |
| **1990 - 2017** | 0.175 | 0.73 |
| **2000 - 2017** | 0.132 | 0.7 |
| **2008 - 2017** | 0.08 | 0.69 |
| **2010 - 2017** | 0.087 | 0.93 |
| **2012 - 2017** | 0.071 | 0.93 |
| **2014 - 2017** | 0.054 | 0.85 |

*All the coefficients are significant at a 1% level (Source: Own estimations)

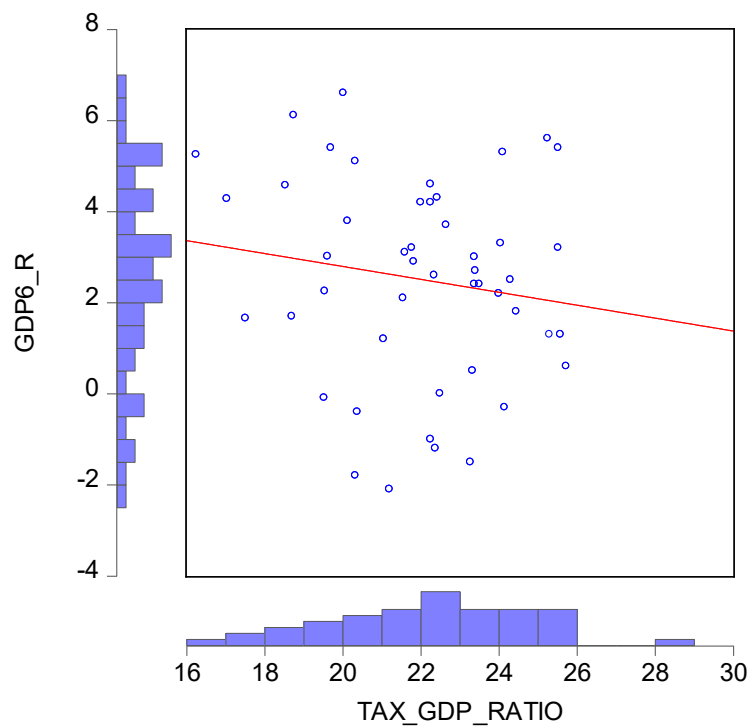# 5    Trade-off between economic growth and higher tax rates

Figure 5 shows a Kernel Fit with a histogram on the axis and the relationship between real economic growth and tax as a percentage of GDP between 1960 and 2017. Figure 6 shows the same results with a regression line instead of a kernel Fit. The results show a weak overall fit (with an adjusted $R^2$ of only 0.17), but a statistical significant t-value (at a 1% level). The results show that for every 1 percentage point increase in tax as a percentage of GDP, economic growth is reduced by 0.3 percentage points.  This confirms that higher tax rates are correlated with lower economic growth. Although lower growth can result in lower revenue, higher taxes also reduce disposable income resulting in lower economic growth. This can become a vicious cycle of higher tax rates and lower growth resulting in a low-growth trap. This emphasise again the need for a reduced tax burden to stimulate and support economic growth, but also to create an environment that can result in higher economic growth.

**Figure 5: Kernel Fit between real economic growth and tax as a percentage of GDP (1960 to 2017)**



Source: Own estimation

**Figure 6: Regression line between real economic growth and tax as a percentage of GDP (1960 to 2017)**
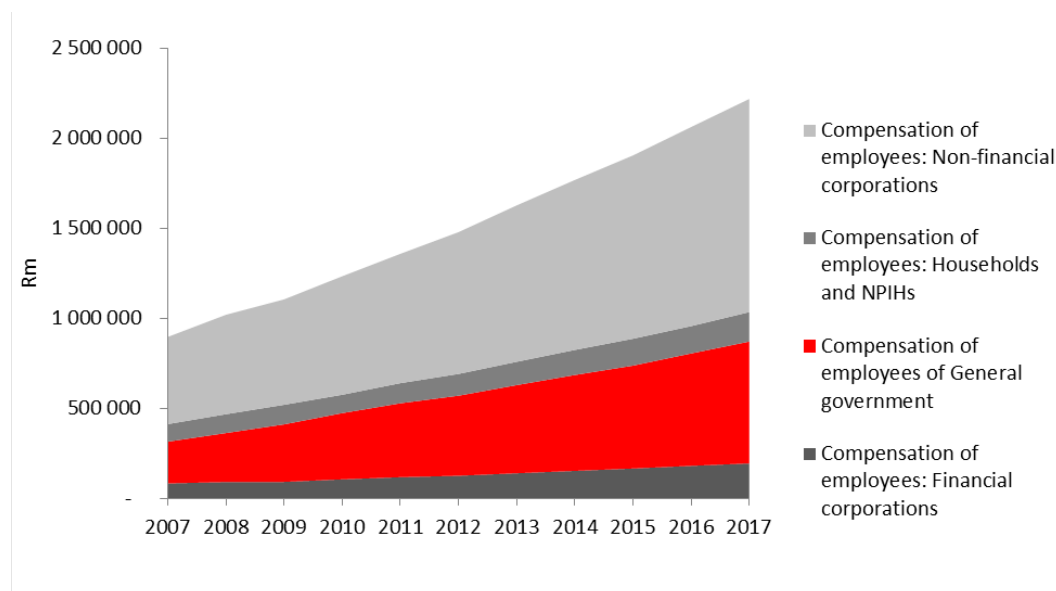


Source: Own estimation

# 6 The need for an efficient and effective government

Given current government debt levels of more than 52% of GDP and a budget deficit of more than 4% (according to SARB data), it could seem 'logic' to argue to keep on increasing tax rates to reduce

the debt and deficit levels. Some would also argue that government's expenditure also needs to be increased to stimulate economic growth. However, arguments for higher tax rates must be reasoned in terms of the impact on economic growth and the goal of getting long-term sustainable economic growth and job creation. Questions must also be asked if South Africans are getting 'value for money' from their taxes given current government expenditure.

The figure below shows a breakdown of compensation of employees in nominal terms between 2007 and 2017 (using data from the SARB). Over this period, compensation of employees of the general government[4] increased by 192%. This can be compared to 144% for non-financial corporations (that also include most of the state owned enterprises), 133% for financial corporations and 68% for households and non-profit institutions serving households. During this period, general government compensation of employees increased from a share of 25.8% of the total wage bill in 2007 to 30.5% of the total wage bill in 2017. If compensation of employees in the general government increased at the same rate as for example financial corporations (133%), the nominal government wage bill would have been 20.1% (or R136.2 billion) smaller in 2017. If the billions in overspending didn't take place, the government debt and budget deficit could have been at much lower levels or more money would have been available to increase spending on infrastructure to support long term economic growth.

**Figure 7: Compensation of employees (nominal), 2007 to 2017**



Source: Own graph based on SARB data

It is important that South Africans keep on asking what value they are getting from their hard earned taxes and keep pressure on government to spend tax money wisely and responsibly. This includes keeping officials accountable, curb corruption, increase government productivity and to create policies and an environment where the economy can grow. The relative steep increase in the government wage bill is an example of superfluous spending without getting much value for money.

The 'value for tax money' argument can be presented in a number of ways and in different sectors or departments. One example is spending by government on education. The underperforming education in South Africa, as well as research on the importance of education on human capital

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[4] General government includes central government, provincial governments and local governments.

development to support economic growth is well documented[5]. Below is an example of a 'human capital realisation ratio' in SA. This can be seen as the 'return' in terms of GDP or compensation of employees, for every rand spent by government on education[6]. This ratio has decreased over time, from above 8 in the 1980's to below 1.5 in 2017. This is indicating that taxpayers are not getting a good return for money spent on education and that drastic interventions are required.

A number of 'what if' scenarios can be done to emphasise this point. The period 1990 to 2000 shows for example an average ratio of 4.1. If this average ratio was retained up to 2017, it would have implied an economy that is 66% larger. Using tax revenue as a percentage of GDP of 24% would imply more than R740bn in additional tax income in 2017 (in nominal terms). This highlights the need for a much better return on taxes paid and the need for a much higher economic growth rate.

**Figure 8: Human capital realisation ratio**



Source: Own estimation based on SARB data

# 7    Conclusion

This paper presents the principles of the Laffer curve and the implications thereof for the economy. It is argued with a Laffer curve that if tax rates are increased above a certain level, tax revenue can actually fall. This is very important for tax policy and implies that increasing tax rates beyond a certain point is counterproductive for raising further tax revenue. Although a hypothetical Laffer

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[5] See for example Van der Berg (2002), The Economist, 2017, World Economic Forum (Global Competitiveness Report) and OECD.
[6] The ratio is calculated with a four year lag between education spending and GDP.

curve can be estimated for any given economy, there are numerous factors to consider in the 'real world' that complicates such an estimation.

Results show that an optimal range of tax revenue as a percentage of GDP for the SA economy is between 20% and 24%. This is much lower compared to the current percentage of 28.6%. Results also show that SA is fast approaching the tipping point of the Laffer curve where a larger tax burden will result in decreasing real tax revenue. The higher tax burden is also correlated with lower economic growth, implying the need to reduce the tax burden to stimulate economic growth as well as the need to have a much higher economic growth rate to increase government revenue.

Given the high current government debt and budget deficit levels, it could seem 'logic' to argue for further increases in taxes to reduce the debt and deficit levels. However, arguments for higher tax rates must be reasoned in terms of the impact on economic growth and the goal of getting higher long-term sustainable economic growth and job creation. There is also a clear need to increase government productivity and service delivery and to reduce the government wage bill to levels of below 25% of the country's overall wage bill.

The only way to get a sustainable increase in tax revenue is to get the economy growing.  This involves the removal of factors that are hindering the economy to grow sustainably at levels of 5% to 6% per year like policy uncertainty, poor policies, a lack of policy implementation, a lack of service delivery and a lack of accountability. An environment is needed that support large scale investment and job creation. This includes factors like an increased supply of skilled, well-educated and motivated workers and a safe and secure environment with law enforcement.

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