



A Test Run on the Impact of Wealth Taxes on Economic Growth in South Africa: The Way Forward

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Abstract: **Objectives** this paper investigates the effects of wealth taxes on the South African economy by analysing the relationship between wealth taxes and the gross domestic product (GDP). **Prior Work** Although other factors such as investment, government expenditure, labour (unemployment), population and capital (education and technology) can also have an impact on economic growth, the idea was to isolate the effects of the taxation, in this case wealth taxes, and to do a test run on current wealth taxes. **Approach** It considers the Engle and Granger cointegration technique on annual tax data of the current forms of wealth being taxed (donations tax, transfer duty and estate duty), to determine the empirical relationship between wealth taxes and GDP. **Results** The study suggests that wealth tax increases GDP in the long run, with no impact in the short run. **Value** The proposed wealth tax is a continuous annual tax and will therefore cause individuals to make changes to their economic activities. The paper contends that the introduction of a comprehensive wealth tax in South Africa by the government would not yield favourable results and is thus not recommended.

Keywords: Wealth taxes; economic growth; South Africa

JEL Classification: H21

1. Introduction

The Davis Tax Committee (DTC, 2017, p. 2) states that South Africa currently has three forms of wealth taxes, namely, donations tax, transfer duty, and estate duty; and further explains that capital gains tax is considered an income tax. Feasibility study submissions were done on the introduction of three other forms of wealth tax, namely, land tax, national tax on value of property, and annual wealth tax. This will

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be in addition to the current wealth taxes, that currently account for only 1 per cent of tax revenue. Feasibility studies weigh the advantages and disadvantages of a proposal, in order to advise if such proposal will benefit or damage the economy.

This paper analyses the feasibility of the proposed wealth taxes and the relationship between current wealth taxes and the gross domestic product (GDP) in South Africa. It uses secondary data from the South African Reserve Bank (SARB), the South African Revenue Service (SARS) and Statistics South Africa (Stats SA). The relationship between wealth tax and GDP, which measures economic performance, is analysed with tax evasion as an error term. The rest of the paper is organised as follows: section 2 presents the literature review of wealth taxation studies on different countries and their relevance to South Africa. Section 3 outlines the research methodology, including a regression analysis, which is used to analyse South Africa's current wealth taxation system in order to advise on the proposed additional wealth taxes. Section 4 discusses the empirical results and section 5 presents the conclusion and recommendations.

2. Literature Review

Hyman (2014, p. 604) defines wealth as the market value of accumulated assets which people can acquire through savings, gifts or inheritances. It is thus the net value of financial assets, capital assets and land owned. Total wealth is all real property, tangible personal property and intangible personal property that households and corporations own. Tangible personal property refers to all movable assets such as jewellery, cars, clothing, furniture, etc. Intangible personal property refers to bonds, stocks, cash and other paper assets. Human capital such as special skills can also be included as wealth and therefore it is challenging to measure wealth for tax revenue purposes. Most wealth taxes are generated from properties. Large tax rates would discourage citizens to possess wealth. It is therefore important for the government to ensure that the wealth tax rates are low enough not to discourage wealth possession and high enough to generate the required revenue.

Piketty (2015, p. 454) argues that optimal tax formulas become complicated and difficult to calibrate. Tax rates should be adapted to the observed speed at which the different wealth groups are rising over time. If the wealth of top wealth holders is increasing at a rate greater than average wealth, then the top wealth tax rates should be high. This means that, to ensure optimal outcomes, different tax rates need to be charged on different classes. The value of property, as well as the income of the owners, have to be taken into consideration. Zee (1995: 31) identified two principles by which equity of a tax system can be examined, which are the benefit and the ability-to-pay principles. According to the benefit principle, a tax system that is introduced has to ensure that the benefit that tax payers will get from the tax revenue

is equivalent to the tax they will pay. The government should put strategies in place, to ensure that the wealth tax revenue improves the living standards of the citizens by improving economic activities, infrastructure and public services. With the ability-to-pay principle, the tax system to be introduced has to ensure that tax payers can afford to pay the tax. With regard to wealth tax, the system needs to ensure that the wealth owners can afford to pay the tax. As discussed above, using different tax rates for different classes of wealth may assist to ensure that the tax is affordable.

Brunner et al. (2012, p. 108) suggest that when designing a tax system, the government has to consider that individuals and firms will try to find ways to escape the tax liability. This tax evasion is an error term in the regression model. It is important that feasibility studies be done, taking into consideration all factors that will limit efficiency. It is also important to design a tax system that is as evasion-proof as possible. A fairly designed tax system can also minimise evasion. However, an unfair tax system will make taxpayers feel that they are being robbed. They will then find ways to minimise the tax they pay, or just not pay it at all. A fairly designed tax system has to treat individuals of the same class equally. This means that the government needs to carefully classify the wealth holders to ensure that those of the same wealth are in the same class.

Evans (2013, p. 5) analysed wealth tax practises around the world and notes that wealth taxes account for relatively small amounts of total tax revenue in countries where they exist. He explains that for countries in the Organisation for Economic Co-operation and Development (OECD), the combined tax revenue from annual wealth taxes and wealth transfer taxes is less than 1 per cent of their total tax revenue. Not many countries use annual wealth taxes – Brazil, Indonesia, China, Russia and South Africa are examples of non-OECD countries without annual wealth taxes. However, in South Africa, the property taxes that are currently charged are regarded as a form of wealth tax. This wealth tax accounts for only 1 per cent of the total tax revenue. Kravec (2013) contends that it would be inappropriate to introduce annual wealth taxation, as it resembles council taxes that are already being paid in the United Kingdom (UK). Citizens would feel that they are being double-charged. South Africans, mostly in urban areas, already pay municipality rates, which fund the local municipality. These rates are paid on a monthly basis. The wealth tax that is currently charged in South Africa is paid on transfer of property from one owner to another. The proposed wealth tax will be charged on an annual basis, calculated on the value of a property. Therefore, the wealth tax in South Africa will be different from the municipality rates that citizens currently pay.

De Cesare (1997) conducted an empirical study to analyse the property tax system and concluded that one of the biggest challenges is property assessment. The study results show that properties were assessed at 44 per cent of their selling prices, on average. This means that the tax revenue would be less than what it is supposed to

be. In order to ensure optimal outcomes of the proposed wealth tax system, the government needs to ensure that the properties are properly assessed. Owners may not disclose the true values of their properties honestly. It is therefore the government's responsibility to deal with the challenge of assessing properties. When designing a property tax system, ability-to-pay should be taken into consideration. This means that the income of the property owners should also be used to determine the rate they should pay. Having a high-value property does not automatically mean that the owner can afford to pay annual taxes, as financial situations change over time. The income that the household generates should also be used to classify the household, together with careful tracking of any income changes.

It is clear that a well-designed wealth tax should raise a meaningful amount of revenue, adhere to principles of horizontal and vertical equity, minimise administration and compliance costs, fight against tax evasion, and minimise distortion to savings and investment decisions. The decision on what forms of wealth will be taxed, and how the tax system will be designed, has an impact on the magnitude of the advantages/disadvantages. A well-designed tax system does not necessarily guarantee optimal results. The efficiency of a tax system is dependent on how the citizens react to the introduction of the tax.

2.1. Disadvantages of Wealth Taxes

Somai (2009, p. 9) concludes that wealth taxation leads to capital outflow, high management costs, distortion of resource allocation, and that it is not as equitable as it seems. Schuyler (2014, p. 14) cautions that a comprehensive wealth tax (tax on all wealth) would reduce wages, investment, incomes, employment and output. The decrease in investment negatively affects the economy and leads to negative shifts in other economic variables. Hansson (2010, p. 39) asserts that wealth tax dampens economic growth. However, the magnitude of the effect is low and this means that the negative effect that wealth tax has on economic growth is very low. It is therefore not wise to introduce a system that will harm the economy instead of improving it. In another empirical study, Dackehag and Hansson (2012, p. 11) argue that tax rates may both influence economic growth and be influenced by economic growth, as high rates may cause lower growth and periods of low growth may result in a need for extra finance through increased tax rates. The increased tax rates lower the growth even further, as the higher the tax rates, the lower the economic growth.

Koch et al. (2005) did an empirical study on economic growth and the structure of taxes in South Africa and found that the effect of taxes on growth in South Africa is different to that of developed countries. South Africa is a developing country with high inequality. There is a large gap between the rich and the poor, which makes it hard to develop a tax system that is fair on both groups. Empirical results show that in South Africa, distortions are severe. The economic growth, due to wealth tax, is

much lower in South Africa than in developed countries. The study concluded that an increase in economic growth can be achieved by a decrease in indirect taxes, relative to direct taxes. As direct taxes such as wealth tax increase, the indirect taxes should be reduced. Koch et al. (2005) suggest that there is a strong correlation between tax increase and reduced economic growth. High wealth tax rates result in lower economic growth.

2.2. Advantages of Wealth Taxes

Arnold (2008, p. 19) conducted empirical studies on the effects of tax structures on aggregate economic growth and argue that income taxes are more associated with a negative effect on economic growth than property and consumption taxes, according to the results of the analysis. Property tax (wealth tax) and consumption taxes can have a negative effect on economic growth. However, the effect caused by income taxes is more severe. He explains that property taxes, more especially immovable property taxes, are the most growth-friendly. It would therefore be beneficial for the government to use wealth tax as an instrument of generating revenue as opposed to increasing income tax.

On the other hand, Iara (2015, p. 11) studied the taxation of wealth in European Union (EU) member countries and argues that increasing housing taxation increases tax revenue, that will make up for the shift away from income tax. It would discourage property investment and lead to investors pursuing more productive investments. Investing in more productive economic activities will result in a higher increase in employment and output. According to Somai (2009, p. 10), wealth tax stimulates economic use of wealth and helps reduce national imbalance. Wealth-holders would be encouraged to use their wealth to generate income instead of just keeping it. This shows that tax can be good or bad for the economy. How it is implemented also has an effect on how efficient it will be. Its maintenance also affects its efficiency. Evans (2013, p. 4) posits that an annual wealth tax can improve efficiency as it would encourage wealth holders to use their assets more productively. Land owners would use their land in a way that will generate income, knowing that they are going to pay annual tax for the land.

3. Problem Statement

The disadvantages seem to outweigh the advantages of a wealth tax. In order to establish whether a comprehensive wealth tax is suitable for South Africa, one needs to analyse its impact. Therefore, the hypotheses to be tested are as follows:

H_0 : Wealth tax has no effect on economic growth

H_1 : Wealth tax has an effect on economic growth

4. Research Methodology

The following model will be used to analyse the relationship between the current wealth taxes in South Africa and GDP:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu_t \text{ where}$$

- Y = GDP; which is the dependent variable
- X_1 = Estate duty (EST)
- X_2 = Transfer duty (TFR)
- X_3 = Donations tax (DON)
- μ_t is the Error term
- β_0 is the constant
- $\beta_1, \beta_2, \beta_3$ are coefficients for the independent variables, estate duty, transfer duty and donations tax respectively. The coefficients show the effect of the independent variables on the dependent variable.

Although other factors such as investment, government expenditure, labour (unemployment), population and capital (education and technology) can also have an impact on economic growth (Hansson, 2010), the idea was to isolate the effects of the taxation (Stoilova, 2017), in this case wealth taxes and to do a test run on current wealth taxes.

4.1. Description of Data

Annual time series data of GDP, estate duty, transfer duty and donations tax were used for this study. The data spans the 24 years since the start of democracy in South Africa, from the 1994/95 financial year to the 2017/18 financial year. GDP data was obtained from Statistics South Africa (Stats SA). Data for the three independent variables (estate duty, transfer duty, donations tax), was obtained from the South African Revenue Service (SARS). The independent variables data is presented collectively as taxes on property.

Overall, the tax-to-GDP ratio is useful in determining the effect of tax on economic growth. Figure 1 below shows the total tax revenue as a percentage of GDP from financial year 1994/95 to 2017/18. The graph shows that the tax-to-GDP ratio is increasing, which means that tax revenue is increasing over time. The tax-to-GDP ratio has increased from 21.9 per cent in 1995/96 to 26.2 per cent in 2017/18.

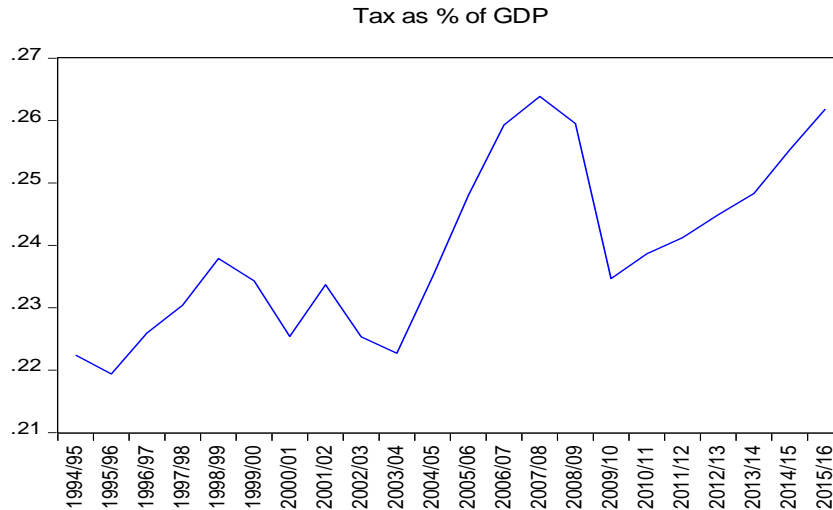


Figure 1. Tax-to-GDP Ratio

The South African Revenue Service (SARS, 2019) notes that the tax buoyancy ratio is an important indicator of tax revenue performance as it measures how sensitive tax revenue is to economic growth. Figure 2 below shows the tax buoyancy ratio for the period 1994/5 to 2017/18. The graph shows that South African tax revenues have remained buoyant. Although the ratio dropped to -0.71 in year 2009/10, due to the global financial crisis, the ratio is always above 0.5. The tax buoyancy ratio was 1.42 in year 2017/18.

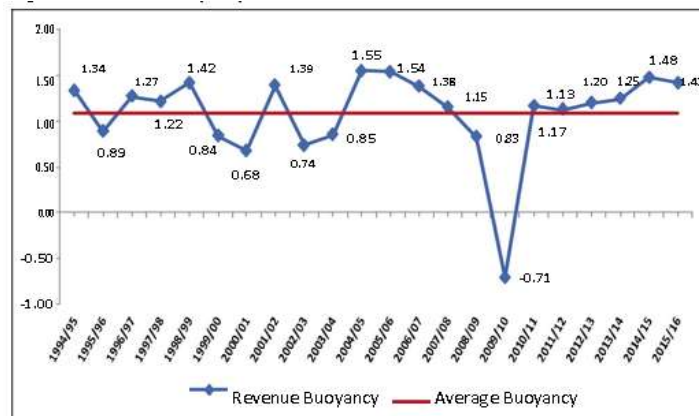


Figure 2. Revenue buoyancy, 1994/95 – 2016/18.

Source: SARS (2019)

The South African Revenue Service (SARS, 2019) notes that 80 per cent of the tax revenue is from personal income tax (PIT), corporate income tax (CIT) and value-

added tax (VAT). Taxes on property account for only 1 per cent of the tax revenue. Three types of property taxes are considered wealth taxes – estate duty, transfer duty, and donations tax. This study focuses on the effect that the three taxes have on GDP. The graph in Figure 3 shows the total wealth tax and total tax revenue for the financial period 1994/95 to 2017/18, with revenue in R'000. As shown in the graph below, wealth tax is a very small percentage of total tax. Donations tax is levied at 20 per cent of donation with an annual exemption of R100 000 for natural persons. Estate duty is levied at 20 per cent on the value of a deceased estate. Transfer duty ranges from 0–13 per cent depending on the value of the property. Transfer duty is the largest source of wealth tax revenue in South Africa.

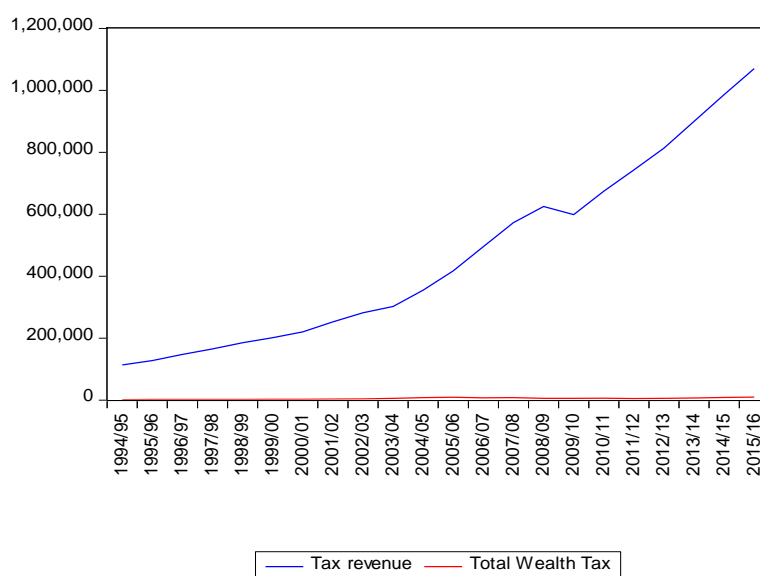


Figure 3. Total Wealth Tax and Total Tax Revenue

4.2. Description of Estimation Methods and Techniques

In order to estimate the model, the Engle-Granger test was done to test for cointegration. This was done to analyse the relationship between GDP and the property taxes. However, other tests also need to be carried out before testing for cointegration.

Firstly, logs are applied on the data in order to normalise the variables. Then unit root testing is done to test for stationarity, using the Dickey-Fuller test. This is to ensure that the variables are stationary, in order not to violate ordinary least squares (OLS) rules before running regressions. We test to see if the time series for GDP, estate duty, transfer duty and donations tax are stationary. The hypotheses are: H_0 : Non-stationary; and H_1 : Stationary.

If the Augmented Dickey-Fuller (ADF) statistic is smaller than the test statistic, we reject H_0 and conclude that the variable is stationary. When this happens, the variable is said to be integrated of order zero $I(0)$. If the variable is not stationary, we differentiate the variable and conduct the unit root test again. If the variable becomes stationary after being differentiated, it is integrated of order one $I(1)$. If the variable is still not stationary, it is differentiated for the second time and unit root tests are conducted. If the variable then becomes stationary after the second differentiating, it is integrated of order two $I(2)$. The variables are stationary with a statistical significance level of 1, 5 or 10 per cent.

After establishing the order or stationarity for the variables, tests for cointegration are carried out. When the variables are cointegrated, it means that there is a long-run relationship between them. It is possible for two non-stationary variables to have a stationary relationship. Thus, when Y_t is $I(1)$, X_t is $I(2)$ and e_t is $I(0)$. As mentioned above, the Engle-Granger was used to test if there is cointegration between GDP and the independent variables – estate duty, transfer duty and donations tax.

Before testing for the long-run relationship, we estimate an equation for the potential long-run relationship. The long-run cointegration equation is estimated by running a regression on Eviews using the Least Squares (NLS and ARMA) method, starting with the dependent variable GDP. This estimates the GDP function: $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu_t$ by giving values for coefficients. We use these results to check if the estimated equation does not violate economic theory rules. This is done by checking if the signs and magnitudes of the coefficients are correct. As mentioned in the description of the model, the priori expectation of the signs of the coefficients is that they are positive, as tax revenue increases GDP. The regression results also produce t-stats and p-values. It is important to use these t-stats to check if there is statistical significance. The rest of the statistical inference in the regression results is not reported as they are invalid.

Once the potential long-run cointegration relationship has been estimated, the Engle-Granger test is done to test if the cointegration relationship indeed exists. The hypotheses for the cointegration test are: H_0 : No cointegration; and H_1 : Cointegration exists.

In this study we will test for cointegration by generating a residual for the estimated potential cointegration equation, and then perform a unit root test for it. In order to conclude that there is cointegration between GDP and the wealth tax variables, the residual has to be stationary. If the ADF statistic is smaller than the test statistic, we reject H_0 and conclude that the cointegration exists. We also check the p-value to see if there is statistical significance. If the results do not indicate that there is cointegration, we have to try again.

If there is cointegration between the variables, we continue to estimate the error-correction model (ECM). The ECM looks at the short run fluctuations in the

variables and relates this to their long-run values. The ECM allows us to add any variable that may have an effect on the dependent variable and helps to explain its short-term fluctuations. However, for this study we will only use the variables in the cointegration equation, as we are trying to determine the effect these variables have on GDP. A regression is run with the variables we want to include in the ECM. Necessary adjustments have to be done on the variables. For I(1) variables we add d in front of the variables, whilst I(0) variables are left as they are. We also add lags on the variables, which can be type -1, -2, etc.

5. Empirical Results

Table 1 below shows results for the stationarity test. All the variables are not stationary. Therefore, they were differentiated and unit root tests were performed again. The first differences of the variables are stationary. We explain the results as follows:

- LGDP: I (1) at the 5% level of significance
- LEST: I (1) at the 1% level of significance
- LTRF: I (1) at the 1% level of significance
- LDON: I (1) at the 1% level of significance

Table 1. Stationarity Test Results

Series	Model	ADF Lags	ADF
LGDP	Trend and Intercept	0	0.5322
	Intercept	0	-2.7707*
	None	0	16.377
DLGDP	Trend and Intercept	0	-3.738**
	Intercept	0	-2.941*
	None	1	-1.051
LEST	Trend and Intercept	1	-2.601
	Intercept	0	-0.967
	None	0	3.178
DLEST	Trend and Intercept	1	-3.326*
	Intercept	1	-3.479**
	None	0	-3.864***
LTRF	Trend and Intercept	0	-1.369
	Intercept	0	-1.374
	None	0	1.688
DLTRF	Trend and Intercept	0	-3.644*
	Intercept	0	-3.669**
	None	0	-3.341***

LDON	Trend and Intercept	0	-3.198
	Intercept	1	-1.042
	None	3	0.899
DLDON	Trend and Intercept	2	-3.723**
	Intercept	2	-3.553**
	None	0	-5.302***
* Statistically significant at 10% level			
** Statistically significant at 5% level			
*** Statistically significant at 1% level			

5.1. Estimating the Long-Run Relationship

The long-run relationship equation between GDP and the wealth tax variables was estimated by running a regression on Eviews using Least Squares (NLS and ARMA). The cointegration regression results are displayed in Table 2 below. The coefficients of the explanatory variables are all positive. The wealth taxes (estate duty, transfer duty and donations tax as indicated with an asterisk) increase tax revenue and thus increase GDP. Estate duty has a coefficient of 0.75 with a significance level of 1 per cent. This means that one unit increase in estate duty would result in 0.75 increase in GDP, *ceteris paribus*. Therefore, estate duty has a positive and significant relationship with GDP, as shown by the significance level of (0.0000). The coefficient of donations tax is 0.11. This means that 1 unit increase in donations tax results in 0.11 increase in GDP. Donations tax is significant at 5 per cent, with significance of 0.0286.

Table 2. Cointegration Results

Variables	Coefficient	Std Error	T-Stat	Significance
LEST	0.75*	0.091	8.202	0.0000
LTRF	0.16*	0.102	1.517	0.1465
LDON	0.11*	0.046	2.379	0.0286
C	7.87	0.508	15.496	0.0000

To test for cointegration between variables, a residual was generated and the ADF method was used to do a unit root test on the residual. The results in Table 3 below show that the residual is statistically significant at 5 per cent. Therefore, the null hypothesis of no cointegration is rejected and cointegration exists between the variables. This means that there is a long-run relationship between GDP and wealth tax (in the form of estate duty, transfer duty and donations tax), in South Africa.

Table 3. Test for Cointegration between Variables

Variables	Lags	T-Stat	P-value
RESGDP (ϵ_i)	1	-2.596	0.0123

5.2. Testing the Short-Run Relationship

To test for the short-run relationship, the error correction model (ECM) was used. The results of the ECM are shown in Table 4 below. The lagged residual of the cointegrating equation has to be included in the ECM as a long-run component. It is a requirement that the coefficient of the lagged residual be negative and between -1 and 0. As the results below show, the coefficient for the residual is -0.140850. It therefore meets the requirement of being negative and between -1 and 0. The lagged residual is also required to be significant. The p-value for the lagged residual is 0.0263, which is less than 0.05. Therefore, the lagged residual is significant.

Table 4. Error Correction Estimates Results

Variable	Coefficient	Std Error	T-Stat	Prob.
D(LGDP(-3))	-0.134226	0.270747	0.495762	0.6290
D(LEST(-1))	-0.082818	0.045268	1.829486	0.0923
D(LTFR(-1))	0.015075	0.027165	0.554949	0.5891
D(LDON(-1))	-0.010672	0.009693	1.100999	0.2925
RESGDP(-1)	-0.140850	0.055608	2.532905	0.0263
C	0.121984	0.031445	3.879290	0.0022
R-squared	0.413535			
Adjusted R-squared	0.169175			
S.E. of regression	0.023389			
Sum squared resid	0.006565			
Log likelihood	45.70715			
F-statistic	1.692319			
Prob(F-statistic)	0.210857			

The speed of adjustment of the dependent variable towards the steady-state growth path, is indicated by the magnitude of the lagged residual's coefficient. The coefficient value of -0.140850 indicates that the adjustment is slow. However, wealth tax and GDP do converge to long-run cointegrating equilibrium.

The results of the ECM show that the p-values of the variables can be used to check if the variables are significant. D(LEST(-1)) is statistically significant only at 10% significance level as the p-value is 0.0923, which is less than 0.1 but more than 0.05. We do not interpret the signs and magnitudes of the coefficients of the variables, as the variables in the ECM are differentiated variables.

The ECM results suggest that there is no short-run relationship between GDP and wealth tax. The short-run changes in wealth tax have a negative but insignificant effect on short-run changes in GDP. The only variable that is significant is the estate duty. This proves that although wealth tax contributes to GDP, the magnitude is very small. This means that the short-run fluctuations in the wealth taxes do not really increase GDP.

The results above are based on the current forms of wealth, which are paid on transfer

of wealth from one owner to another. They show that the tax income from this wealth contributes to GDP growth by a small percentage. This increase in GDP is evident in the long run. In the short run, wealth tax does not impact GDP and therefore does not contribute to economic growth. Although the government does get the tax revenue, other economic activities are discouraged by the wealth tax, which can result in a negative impact on GDP. Therefore, overall, there is no direct impact in the short-run. Herein lies the value of the research, that it was only a test run and that the introduction of a comprehensive wealth tax for South Africa is not suitable at this stage. Most of the literature discussed above concluded that wealth tax has a negative impact on GDP.

6. Conclusion

In conclusion, the study shows that wealth tax increases GDP in the long run and has no impact in the short run. It is therefore not recommendable for the government to introduce a comprehensive wealth tax in South Africa. The tax will generate revenue for the government but will not ensure economic efficiency. The aim of the study was to do a test run in terms of an empirical analysis to determine if there is a positive relationship between wealth tax and GDP. The conclusions were made based on empirical results.

The Engle Granger cointegration test results show that cointegration exists between the variables. The study shows that there is a long-run positive relationship between wealth tax and GDP. This shows that wealth tax has a positive impact on the South African economy in the long run. The ECM results suggest that there is no short-run relationship between GDP and wealth tax.

The study is limited to evaluating whether the introduction of a comprehensive wealth tax will have a positive impact on the South African economy. The study does not recommend a tax rate that will ensure optimal outcomes of the wealth tax. This therefore leaves room for further research to determine a structure of the wealth tax and the tax rates that will produce optimal outcomes, which will generate revenue and maintain efficiency and equity.

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