The Nexus between Social Spending and Economic Growth in South Africa: A Cointegration Approach

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ABSTRACT

South African government has been utilizing expansionary fiscal policy for the past two decades to tackle the declining growth and the prevailing socio-economic challenges. This policy stance has induced government spending to increase in social sector to increase. Therefore, this study investigates the impact of disaggregated government social expenditure on economic growth in South Africa, using annual time series spanning from 1983 to 2016. The autoregressive distributed Lag (ARDL) econometric modelling approach is employed to estimate the effect of education, health and social spending on economic growth. The results revealed that education spending has an insignificant impact on economic growth in the long run. However, Health and social protection expenditure have a significant and positive effect on long-term economic growth. Notably, the impact caused by disaggregated social spending is small. Despite having low elasticities, most social spending variables have a significant impact and play an important role in stimulating in the economy. In conclusion, the South

African government cannot overall rely on government social spending to achieve its economic goals highlighted in the NDP. Therefore, may need to focus on other economic fundamentals to raise economic growth.

1. INTRODUCTION

Like most developing economies worldwide, the South African democratic government has relied on expansionary fiscal policy to facilitate the macroeconomic objectives of the country. Furthermore, the persisting rise in socioeconomic crisis, such as income inequality, poverty and unemployment, have induced the government to channel more resources to social programmes (National Treasure, 2018). Consequently, social spending budget has been the highest when compared to other public expenditures (Odhiambo, 2015; National Treasury, 2018). According to the Keynesian framework, fiscal policy enhances economic growth during short-run. Endogenous theories take it further and propose that that government spending in social sectors stimulates human capital, which is fundamental for sustainable growth.

Recent empirical studies have debated the importance of investigating the association between disaggregated government social spending and economic growth (Khan and Basher, 2015; Chude and Chude, 2013; Mercan and Sezer, 2014; Beraldo, Montolio, and Turati, 2009). Despite the growing interest in examining this relationship, limited scholarly attention has been paid on the South African context. In Addition to this limited scholarly evidence, most studies have applied the aggregated measure of government spending (Chipaumire *et al.*, 2014; Keho, 2015; Menyah and Wolde-Rufael, 2012; Odhiambo, 2015). The aggregated measure of government spending has two limitations, firstly it's aggregate all government spending which makes it susceptible to suffer aggregation bias. Secondly, the aggregated measure does not provide a clear of how particular components of government spending affect economic growth. There is further evidence in the literature that the effect of fiscal spending on economic growth depends on the sectors to which expenditures are in channelled too. Given the above limitations, the current study seeks to explore this gap by applying a more disaggregated approach which does not suffer an aggregation bias.

This study will examine the long-run relationship between disaggregated government social spending and economic growth in South Africa, over the period 1983 – 2016. The disaggregated government social spending is measured by education, health and social protection spending and the selection of these variables are supported by previous empirical literature (Khan and Basher, 2015; Mariana, 2015; Mallick and Dash, 2015; Mercan and Sezer, 2014). The study employs the Auto-Regressive Distributed Lags (ARDL) Bound Approach to estimate the effect of government social spending on economic growth. The advantage of using the disaggregated approach of expenditure it facilitates your targeted fiscal policymaking
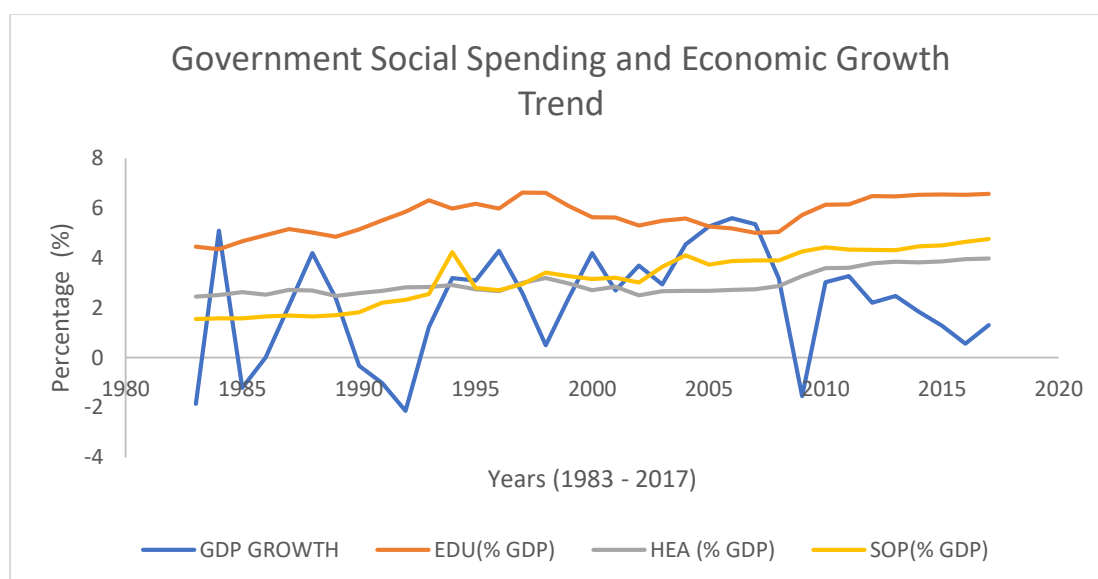
in terms of discretionary decisions. From an academic standpoint, this research is important as it adds evidence to the scant literature on this subject available in the South African context. The rest of the paper is organised as follows: Section 2.0 reviews government social spending and economic growth in South Africa. While section 3.0 outlines the literature reviews, 4.0 reviews the methodology adopted by the study. While the interpretation and discussion of results are presented in 5.0. Lastly, section 6.0 provides the conclusion and policy implications.

2. Government Social Spending and Economic Growth in South Africa

Since 1994, the government of South Africa has been relying on expansionary fiscal policy, mostly characterized by increased government spending, with large portions channelled to social spending (Alm and Embaye, 2010; National Treasury, 2018; Van der Berg and Moses, 2012) Consequently, the social spending budget for the past five years (2014/15 to 2018/19) shows that about R 744.2 billion of R1.25 trillion for 2014/2015 budget expenditure was directed to social spending, while budget expenditure for 2015/2016 indicate that R 777. 9 billion of R1.35 trillion was retained for social services. From the overall budget of R 1. 46 trillion about R 816 billion was directed to social spending for 2016/2017, whereas for 2017/2018 budget expenditure about R 884 billion of R 1.56 trillion was reserved for social spending. Lastly, the budget expenditure for 2018/2019 indicates that about R1. 01 trillion of R1. 67 trillion was channelled to social spending.

The substantial growth of social spending corresponds to the high socio-economic challenges, such as income inequality, poverty and unemployment. Consequently, the implementation of National Student Financial Aid Scheme (NSFAS), non-fee public schools, increase in per-capita health spending, the construction of more than 1.5 million RDP free houses, and having more than 17,331, 402 social grants recipients has compelled the social spending to increase rapidly over the two decades (StatsSA,2019).

Figure 1: Government social spending and Economic growth, 1983 to 2017

Source: Researcher's Estimations, SARB (2018) & World Bank Data (2018)

Figure 1 illustrates the trends for disaggregated government social spending in education, health, social protection and economic growth from 1983 to 2017. The social spending variables are measured as the percentage of GDP. Education expenditure has actually taken a larger portion of the budget than health and social protection spending, through the entire period. In terms of health and social protection, health expenditure on average took a larger share of income during the apartheid when compared to social protection expenditure. This trend is not surprising since the issues of social protection were side-line and the majority of people were marginalised during this period. After apartheid social protection expenditure overtook health spending, this is moderate because the democratic government has used expansionary fiscal policy to address the social imbalances and stimulates the welfare of South Africans. Therefore, causing social protection to exceeded health expenditure.

Moving on to economic growth, from 1983 to 1987 the GDP growth average was 0.83%, and later decrease to 0.62% between 1988 and 1992. The decline of economic growth during the 1980s was due to the external sanctions that were placed in South Africa as results of apartheid laws. However, between 1993 and 1997 the GDP growth average increased to 2.89%, which slightly decreased to 2.70% between the period 1998 and 2002. This rise of GDP growth may be caused by the abolishing of apartheid law as the democratic government came to power in 1994. The period between 2003 and 2007 recorded the highest GDP growth average of 4.75%. This significant growth was induced by removal of sanctions, reduction of inflation, the stabilizing of public finance and relaxing restrictive labour which increased foreign investment. However, between 2008 and 2012 the GDP growth average contracted to 2.04%. This decline of economic growth was not surprising due to the global financial crises of 2008

which compelled South Africa to enter into a recession in 2009. Lastly, between 2013 and 2017 the GDP growth average decline again to 1.49%. This contraction of economic growth was anticipated, because of the persistent rise in the unemployment rate and crime rate. Furthermore, the high political tension caused credit rating agencies such as S&P Global and Fitch to downgrade South African credit status to junk status and bus-investment grade of BBB respectively during this period.

3. Literature Review

From the theoretical standpoint, Keynesian framework advocates that the use of expansionary fiscal policy by the government promotes economic growth during recessionary periods (Chude and Chude, 2013; Ebaidalla, 2013; Ogbuagu and Ekpenyong, 2015; Tang, 2009). According to this theory, the increase in government expenditure stimulates aggregate demand which subsequently induces economic growth through the multiplier effect. The empirical evidence of Bosupeng (2015); Gurgul and Lach (2011); Keho (2015); Mallick and Dash (2015); Mariana (2015); Mercan and Sezer (2014); Mura (2014) and Muthui, Kosimbei, Nair and Thuku (2013), supports the Keynesian view.

Contrary to the Keynesian framework, Wagner (1883) proposed that the expansion of economic activities stimulates government expenditure. According to this theory, economic growth is crucial to fiscal policy development (Keho, 2015; Nketiah-Amponsah, 2009; Ogbuagu and Ekpenyong, 2015). The empirical evidence generated by Antonis, Constantinos and Persefoni (2013); Gurgul and Lach (2011); Kamasa and Ofori-Abebrese (2015); Kumar, Webber, and Fargher (2012), and Tang (2009), indicated that economic growth drives government expenditure. However, Bagdigen and Cetintas (2004) concluded that Wagner's law is invalid for Turkey. The endogenous growth theories propose that sustainable economic growth is determined by investment in human capital and in technological progress. Romer (1986, 1990) advocates that research and development stimulate economic growth (Bloom, Romer, and Terry, 2013; Braunerhjelm, Acs, Audretsch and Carlsson, 2010). Furthermore, Lucas (1988, 1990), proposed that investment in education is essential in growth driven nation (Bosupeng, 2015; Christie, 2014).

Lastly, Barro's growth framework revealed that productive government expenditure, such as education, health, public order and safety and infrastructure expenditure, drives economic growth by stimulating the production efficiency of the private sector (Christie and Rioja, 2014; Mura, 2014). The findings of Pelinescu (2015), Mura (2014), Blanco et al.(2013), Bayarcelik and Tasel (2012), Zhang and Zhuang (2011), Ljungberg and Nilsson (2009) and Beraldo *et al.* (2009) indicate that government spending investment in human capital promotes long-run economic growth.

At the empirical front, international studies have generated mixed results, Khan and Basher (2015) revealed that social spending boosts economic growth for Australia and New Zealand. Consequently, in the case of Australia education, health and social welfare expenditure promote economic growth. However, in New Zealand, economic growth is driven by health and social welfare spending. While studies by Gurgul and Lach; (2011); Tamang (2011); Chude and Chude (2013); Muthui *et al.* (2013) Mercan and Sezer (2014); Mallick and Dash (2015); Mariana (2015); Saad and Kalakech (2009); Bose *et al.*(2007); Blankenau *et al.* (2007) confirmed a positive association between education spending and economic growth. Surprisingly, Bosupeng (2015) findings indicated that education spending does not promote economic growth in Botswana. Furthermore, the empirical evidence of Beraldo *et al.* (2009) and Li and Haung (2009) revealed that education and health spending cause positive variation in economic growth. While Mura (2014) concludes that health expenditure is a detrimental impact on economic growth.

The empirical literature generated in South Africa relied on aggregate measurement. According to Ziramba (2008), there is bi-directional causality between aggregate government spending and economic growth in the short-run, however no causality during the long-run. Menyah and Wolde- Rufael (2012) and Odhiambo (2015) reported a unidirectional causality moving from economic growth to government spending. Furthermore, Chipaumire *et al.* (2014) revealed that government spending has a negative effect on economic growth but Keho (2015) confirmed the Keynesian theory.

4. Data Description

Our empirical analysis is founded on the endogenous growth framework, which proposed that government expenditure in social sector promotes sustainable long-run economic growth (see Mura, 2014; and Beraldo *et al.,* 2009). According to Barro (1990), fiscal policy is fundamental to long-run economic growth. The study goes further and adapts the Khan and Bashar (2015) growth model, where real GDP per capita is a function of government expenditure in education, health and social welfare. The model also includes the real money supply and the real effective exchange rate as control variables. Monetary policy has a great impact on economic activities and the changes in the real effective exchange rate are very crucial to trade (Dingela and Khobai, 2017; Chaitip *et al.*, 2015 and Habib *et al.*, 2016). Due to our sample size, only two control variables could be incorporated into the model. Therefore, our empirical assessment is based on annual time series data spanning from 1983 to 2016. The secondary data for real GDP per capita (GDPpc) at constant price 2010, social spending on total education expenditure (EDU), total health expenditure(HEA) and total social protection expenditure (SOP), money supply (M2), real effective exchange rate (REER) was extracted

from South African Reserve Bank (SARB) online database. While the consumer price index (CPI) and population data were obtained from World Development Indicators (WDI). Accordingly, all the social spending variables used were deflated by CPI and converted into per capita values in order to account for population growth. Consequently, the variables will be expressed as:

$$LGDPpc_t = \beta_0 + \beta_1 LEDUpc_t + \beta_2 LHEApc_t + \beta_3 LSOPpc_t + \beta_4 LMS_t + \beta_5 LREER_t + u_t \quad (1)$$

Equation 1 depicts the estimated model, where L represents the natural logs and pc stands for per capita terms, where subscript t represents time, and β_0 is an intercept, u_t s the error term. The parameters of interests are β_1, β_2, and β_3, and show how education, health and social protection expenditures affect economic growth respectively. According to Gurgul and Lach (2011) social spending on education, health and social protection stimulates economic growth. Moreover, Marian (2015), Chude and Chude (2015), Beraldo *et al.* (2009), Li and Haung (2009) concluded that education and health spending boosts growth. However, findings by Khan and Bashar (2015) and Mura (2014) suggests that education and health expenditure have a negative impact on economic growth respectively. Due to the inconclusiveness of the empirical literature, these parameters are expected to take a positive or negative sign. The Eviews 10 soft is employed by the study to generate all the empirical estimations.

4.2 Estimation Procedure

4.2.1 Unit Root Test

When using time series data the fundamental procedure is to check the stationary properties before any empirical analysis are conducted. This process is essential since it prevents the interpretation of the spurious model (Gujarati and Porter, 2009). Therefore, the Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) unit root tests are employed. These unit root techniques help in determining whether the series is stationary or not. Furthermore, if the variable has a unit root, the null hypothesis is accepted for both ADF and PP tests. However, when the variables are stationary in the level form the null hypothesis is rejected (Koop, 2013).

4.2. 2 ARDL Model Specification

The Autoregressive Distributed Lag (ARDL) Bound technique was pioneered by Pesaran and Shin (1999) and later extended by Pesaran *et al.* (2001). The ARDL approach has also been employed by Mercan and Sezer (2014), Odhiambo (2015), Menyah and Wolde-Rufael (2012), Chirwa and Odhiambo (2016). This single equation approach has unique features which makes it possible to estimate a model with variables integrated of order one and order zero

and also suitable for a series with a small size sample. Consequently, the ARDL – bound model for this study can be expressed as follows.

$$\Delta LGDPpc_t = \beta_0 + \beta_1 LGDPpc_{t-1} + \beta_2 LEDUpc_{t-1} + \beta_3 LHEApc_{t-1} + \beta_4 LSOPpc_{t-1} + \beta_5 LMS_{t-1} + \beta_6 LREER_{t-1} + \sum_{i=1}^{n} \alpha_i \Delta LGDPpc_{t-i} + \sum_{i=1}^{n} \theta_i \Delta LEDUpc_{t-i} + \sum_{p=0}^{n} \delta_i \Delta LHEApc_{t-i} + \sum_{p=0}^{n} \emptyset_i \Delta LSOPpc_{t-i} + \sum_{p=0}^{n} \gamma_i \Delta LMS_{t-i} + \sum_{p=0}^{n} \sigma_i LREER_{t-i} + \mu_t \quad (2)$$

Where $\beta'_s, \alpha_i \theta_i, \delta_i, \emptyset_i, \gamma_i \ \sigma_i$ are the parameters to be estimated, $LGDPpc$ is the natural log of real GDP per capita, $LEDUpc$, the natural log of education expenditure per capita, $LHEApc$ is the natural log of health expenditure per capita, $LSOPpc$ the natural of log of social protection expenditure per capita, LMS is the natural log of money supply and $LREER$ is the real effective exchange rate, μ_t is the white noise error term and Δ is the first difference operator. The Akaike Information Criterion (AIC) is used to select the optimal lag order for each variable (Lutkepohl, 2006). The cointegrating relationship among the variables is checked using the Wald F-statistic. The critical F values known as the lower and upper bound values for each level of significance were generated by Pesaran and Shin (1999) and Pesaran *et al* (2001). Therefore, the two sets of asymptotic critical values, one set suggesting that all the employed regressors in the ARDL bound approach are integrated of order one I(1), while the other set on critical values implies that the regressors are integrated at order zero I(0). Furthermore, the null hypothesis can be expressed as $H_0 : \lambda_1 = \lambda_2 = \lambda_J = 0$, suggesting the absence of a long-run relationship between the endogenous variable and the regressors. While the alternative hypotheses indicate the existence of a cointegrating relationship. Subsequently, if the computed F−statistic is below the lower critical bound, the null hypothesis is accepted. But when the computed F-statistic is above the upper bound, the null hypothesis is rejected in favour of the alternative $H_1 : \lambda_1 \neq \lambda_2 \neq \lambda_J \neq 0$. Consequently, if the cointegration relationship is detected than equation 2 can be transformed into an error correction representation as follows:

$$\Delta LGDPpc_t = \beta_0 + \sum_{i=1}^{n} \alpha_i \Delta LGDPpc_{t-i} + \sum_{i=0}^{n} \theta_i \Delta LEDUpc_{t-i} + \sum_{p=0}^{n} \delta_i \Delta LHEApc_{t-i} + \sum_{p=0}^{n} \emptyset_i \Delta LSOPpc_{t-i} + \sum_{p=0}^{n} \gamma_i \Delta LMS_{t-i} + \sum_{p=0}^{n} \sigma_i LREER_{t-i} + \delta ECT_{t-1} + \mu_t \quad (3)$$

The ECT_{t-1} denotes the lagged error correction term, while δ is the speed of adjustment which incorporates a negative sign and indicates how the system adjusts to long-run equilibrium after past period deviation.

5. Empirical Findings

The ADF and PP results presented in table 1(a) and 1(b) strongly confirms that LGDPpc, LEDUpc, LHEApc, LSOPpc and LMS are non-stationary in levels but becomes stationary after first differencing. While LREER is stationary in level and the null hypothesis for this variable is

rejected. In conclusion, the variables are integrated of mixed order I (1) and I(0) and the applicable econometric methodology to employ is the Autoregressive Distributed Lag(ARDL).

Table 1(a): Augmented Dickey- Fuller Unit Root Test Results

Variable	Lag	Restriction	t-stats	Critical Values	Inference
LGDPpc	1	Constant & Trend	-2. 7554	-3. 5578	
ΔLGDPpc	0	Constant & Trend	-3.7484**	-3. 5578	I(1)
LEDUpc	0	Constant & Trend	-2.0819	-3. 5529	
ΔLEDUpc	0	Constant & Trend	-5.6368***	-3. 5578	I(1)
LHEApc	0	Constant & Trend	-1.5328	-3.5529	
ΔLHEApc	0	Constant & Trend	-5. 6147**	-3. 5578	I(1)
LSOPpc	2	Constant	-0.7093	2. 9604	
ΔLSOPpc	0	Constant	-7.4182**	-2.9571	I(1)
LMS	1	Constant & Trend	-2.9291	-3.5578	
ΔLMS	0	Constant & Trend	-3.7467**	-3.5578	I(1)
LREER	0	Constant & Trend	-3. 4212*	-3.2096	I(0)

Notes Asterisks * and ** denotes statistically significant at 10% and 5% respectively. While the lag length for ADF tests are automatically chosen by the Schwarz Information Criterion (SIC).

Source: Researcher's own Results

Table 1(b): Phillips – Perron Unit Root Test Results

Variable	BW	Restriction	t-stats	Critical Values	Inference
LGDPpc	2	Constant & Trend	-1.6186	-3. 5529	
ΔLGDPpc	4	Constant & Trend	-3.7269**	-3. 5577	I(1)
LEDUpc	1	Constant & Trend	-2.1227	-3. 5529	
ΔLEDUpc	2	Constant & Trend	-5.6374**	-3. 5578	I(1)
LHEApc	2	Constant & Trend	-1.4824	3.5529	
ΔLHEApc	2	Constant & Trend	-5.6291**	-3.5578	I(1)
LSOPpc	4	Constant	-0.5958	-2.9540	

ΔLSOPpc	5	Constant	-8.3273**	-2.9571		I(1)
LMS	1	Constant & Trend	-1.8889	3.5529		
ΔLMS	1	Constant & Trend	-3.5957**	3.5578		I(1)
LREER	0	Constant & Trend	- 3. 4211*	3.2096		I(0)

Notes Asterisks * and ** denotes statistically significant at 10% and 5% respectively. While the bandwidths for PP tests are automatically chosen by the Newey West Bartlett Kernel Selection.

Source: Researcher's own Results

To check the cointegrating association between social spending and economic growth ARDL-bound test is estimated. Accordingly, the standard procedure is to first identify the optimal lag lengths to be included in the unrestricted error correction model. The AIC lag selection criteria is employed and the ARDL (1, 2, 2, 1, 1, 2) model was chosen. Table 2 shows the bound test results. According to findings, the F-statistics value of 4.90 is higher than upper bound critical values at 5% and 10% (higher than all the critical values) level of significance. Therefore, the null hypothesis of no cointegrating relationship is rejected. Since the results indicate the existence of a long-run relationship between educations, health, social protection, real money supply, real effective exchange rate and economic growth.

Table 2: The Bound Test Results

F-statistics	$\theta = 0.05$		$\theta = 0.10$	
	Lower Bound	Upper Bound	Lower Bound	Upper Bound
4. 903211	3.12	4.25	2.27	3.79

Source: Researcher's Own Results

The presence of a cointegration relationship allows the study to ascertain the long-run equilibrium effect between government social spending and economic growth. Therefore, Table 3 depicts the ARDL long-run coefficients results. The long-run education (LEDUpc) elasticity of 0.24% is insignificant, holding constant other independent variables. Education expenditure incorporates the expected sign but has an insignificant impact on economic growth in the long term. This finding is not theoretically plausible but corresponds with empirical evidence of Bosupeng (2015), which indicated that education expenditure has an insignificant impact on economic growth in Botswana in the long run. The lack of a significant association between education spending and economic growth is not surprising since the employed variable captures expenditure not the quality of education. In addition to that, the employed variable presents total government expenditure on education which includes primary, secondary and tertiary spending.

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According to economic literature, only tertiary education is capable of stimulating sustainable economic growth. Whereas primary and secondary education does not enhance economic growth (Bella *et al.*, 2017; Bloom *et al.*, 2013; Chude & Chude, 2013; Lucas, 2009). Another important factor which may distort the positive impact of government education expenditure on economic growth is the high unemployment rate that exists in South Africa. The country suffers from structural unemployment. Thus, statistics reports indicate that the annual number of graduates who are unemployed is increasing.

Moving on to health expenditure, the results indicate a positive association between this variable and economic growth. When health spending increase (LHEApc) by 1%, the real GDP per capita (LRGDPpc) expand by 0.35% in the long run, at 1% significance level, holding constant other independent variables. The finding corresponds to a theoretical assumption. Accordingly, Basher and Khan (2015); Gurgul and Lack (2011); Beraldo *et al.* (2009), and Li and Haung (2009) spending on health promotes economic growth.

The estimated social protection (LSOPpc) elasticity for real GDP per capita (LGDPpc) is 0.16% and significant at a 10% level of significance, holding constant other independent variables. According to theoretical literature, social protection expenditure is only capable of improving the welfare of individuals and does not influence the efficiency of the private sector. However, Khan and Basher (2015) findings suggest that social welfare spending for Australia enhance long-run economic growth. Furthermore, the results are plausible for the South African case, since more than 11 million people depend on social grants to provide their daily needs (StatsSA, 2017). Therefore, social protection spending channels economic growth indirectly through its impact on household consumption.

The long-run elasticity of money supply (LMS) is 0.40% and significant at 1% level of significance, holding other independent variable constant. Therefore, an increase in money supply by 1% boosts economic growth (LGDPpc) by 0.40%. This positive effect supports the notion that expansionary monetary policy is capable of raising economic growth through its boosting consumer demand. This finding is also consistent empirical evidence of Chaitip *et al.* (2015) and Dingela and Khobai (2017). The estimated real effective exchange rate elasticity (LREER) for real GDP per capita (LGDPpc) is −0.25% and significant at 10% level of significance. Therefore 1% appreciation of South African currency would contract the economy by 0.25%, holding constant other independent variables. The outcome was as expected and Habib *et al.* (2016) also generated similar findings. According to economic theory, the appreciation of local currency can inhibit economic growth or through discouraging exports or makes domestically produce goods less competitive on the global market. The decline in exports due to the appreciation of the currency, in turn, would affect the country's economic growth through a reduction in foreign currency (Mankiw, 2010). This is particularly

significant in countries like South Africa were trade revenue occupies a greater portion of income.

Table 3: The Estimated ARDL Long Run Coefficients

ARDL (1,2,2,1,1,2) Long run Coefficient based on AIC Model, LGDPpc is the dependent variable.

Regressor	Coefficient	Standard Error	T-Ratio (p-value)
LEDUpc	0.239	0.299	0.796(0.438)
LHEApc	0.348	0.119	2.912(0.010)
LSOPpc	0.159	0.079	2.023(0.060)
LMS	0.404	0.087	4. 645(0.000)
LREER	-0.250	0.123	-2. 037(0.058)
C	4.191	1.066	3.931 (0.001)
Trend	-0.009	0.003	-3.211(0.005)
ECM(-1)	-0.561	0.090	4.544(0.000)

Test Statistics	LM Version	F Version
A: Serial Correlation	CHSQ(2) = 4. 5105[0.1048]	F(2,14) 1.1486 [0.3452]
B: Heteroscedasticity	CHSQ(15) = 14. 6469 [0.4771]	F(15, 16) 0.9003 [0.5783]
C : Normality	JB = 2. 114445 [0.3474]	Not Applicable
D : Ramsey RESET	Not Applicable	F (1,15) 0.009 [0.9231]

Source : Researcher's Own Results

Turning to the Error Correction results, we find that the error correction term (-0.56) carries the appropriate sign (i.e., negative) and the value is statistically significant at 1% level of significance. This implies that the system will converge back to equilibrium by approximate 56% yearly after the previous disequilibrium. The significance of the ECT value confirms that government spending on education, health, social protection, money supply, and real effective exchange rate, jointly cause economic growth in the long run. Final the model passes all the diagnostic tests. The tests show no sign of serial correlation, heteroscedasticity, functional misspecification and the residuals are normally distributed.

6. Conclusion and Policy Implications

This study estimated the impact of government social spending on economic growth in South Africa, focusing on education, health and social protection expenditures. The ARDL bound test results confirmed a cointegration relationship between disaggregated social spending and economic growth over the period of 1983 to 2016. The long-run findings revealed that public education investment is ineffective in stimulating economic growth, due to its insignificant impact. However, the long-run economic growth is explained by health and social protection spending, through its positive and significant effect. The ECM coefficient confirms the existence of a long-run equilibrium relationship between government social spending and economic growth. Concerning the control variables, the use of expansionary monetary policy (through money supply) by the central bank promotes sustainable growth. While the rise in the real effective exchange rate (appreciation of South African currency) causes economic growth to decline. The overall results revealed that social spending variables promote economic growth in South Africa, despite having low elasticities.

The findings of this study present the following policy implications. Firstly, the low elasticities for disaggregated social spending suggested that education, health and social protection spending have a low impact on economic growth in South Africa. Secondly, the lack of significant affiliation between education expenditure and economic growth in the long-run. Such outcomes might make it difficult for the government to ascertain the 2030 NDP objectives. Therefore, the government should evaluate whether the programmes it funds at universities, and other tertiary institutions correspond to the macroeconomic objectives of the country. If the programmes meet the requirement of employers (labour market), thus reducing the structural unemployment which is a big obstacle to the South African economy. Lastly, it is clear that the government cannot overall rely on social spending to boost its economic perspective highlighted in the NDP. Therefore, there may be a need for policymakers to focus on other economic fundamentals to raise economic growth.

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