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THE EXTEND OF THE RESPONSE OF GOVERNMENT EXPENDITURE IN SOUTH AFRICA

Abstract:

In South Africa, the total government expenditure keeps increasing yearly for the provision of public services such as health, education Social protection and Housing trying to improve the social state. This increase in total government expenditure is affecting the budget deficit and the government is increasing taxes and trying to reducing spending. This study aims to examine the extent to which education, health and defence response to shock from total government expenditure in South Africa. Data was collected from the South African Reserve Bank from 1983 to 2017. The Generalise Impulse Response function and Variance Decomposition was used to analyse the data. The results showed that total government expenditure responses positively to shock from education, health and defence response. Also, over the periods, education, health and defence explain the variation in total government expenditure. This study recommends that reducing the defence expenses will not have much effect on the total government expenditure.

Keywords:

Government expenditure, Education, Health, Social protection, Housing, South Africa, Generalised impulse response function and Variance decomposition.

Introduction

According to (Ratikane, 2011) government expenditure is a fundamental in achieving the redistributive objectives such of basic services essential in order to combat poverty in South Africa. Ajam (2006) alludes to the impressive commitment of the South African government to the fight against poverty judging not only by the number of initiatives but also the magnitude of resources allocated towards combating poverty. The government succeeded in shifting more resources towards government social programmes evidenced by expansion of the social outlays which grew by an average annual rate of 4.5 percent in real terms between 1992/3 to 2002/3 (compared to 3.0 percent of total expenditure), in fact growing by a massive 14 percent in real per capita terms from 1995 to 2000 (Van der Berg, 2006; Van der Berg & Louw, 2004). The historical background of South Africa and the nation's political economy keep on moulding the quality of life of most families in critical ways, with government social security being one (Marais, 2001). Gafar (2005) iterates that when health, basic education, access to safe water and basic infrastructure would contribute to economic growth, improve the lot of the poor and their chances for employment. An increase in government expenditure every year has resulted at spending billions of Rands providing a range of public services such as health, education, and housing just to mention few. So far, the government has spent around R100-R200 billion for the past 10 years on trying to improve the social state. The amount the government of South Africa has spent annually has risen sharply. This has resulted in budgetary problems for the government, which lead them to take steps of raising taxes, reducing spending in areas that are considered less important than the areas in which has increased greatly. In 2008, South Africa experienced recession and the government had to spend billions of rand. Spending on social services become very expensive which has been paid through tax revenues. The prevailing view in South Africa is that government expenditure on education and health are "exclusively-poor" programmes that benefit largely "poor people" and their children. The South African national government spending was R1 trillion in the 2012/13 fiscal year as compared to R567 billion spent in 2007/08. This demonstrates the increased significance of the part of the provinces in the South African government (Statistics SA, 2013).

For the past 23 years, South Africa’s economy has increased from the level of million rand to billion rand on the expenditure side of the budget. The effects of this expenditure are largely unnoticeable on the citizen (Muritola and Taiwo, 2011). This study aimed to examine the response of government expenditure to shocks from Education, Health, Social protection and Housing. This is attained in the following sections: section 2 will be the theoretical framework and literature review while section 3 is the methodology. Section 4 presents the empirical finding and finally the last section 5 is conclusion.

Literature review

Musgrave's hypothesis observes the changing role of the public sector during development processes and therefore relies on structural factors in order to explain government growth (Gemmell, 1993). At later development phases, institutions for private capital formation become more developed and therefore the share of public expenditure may decrease (Musgrave, 1969). Musgrave was of the opinion that when per capita income is low, the demand for publics services will decrease. Verbeck (2000) iterates that when primary income increases, there will be increase in the demand for health, education and transport supplied by the public sector.

These findings on the link between education and government expenditure raise a number of important issues. First, country heterogeneity matters. For example, papers utilizing samples that include developed countries tend to find weaker results, which is consistent with diminishing returns in education. In light of this heterogeneity, Jones and Olken (2006) argue that the within-country dimension is critical for explaining the determinants of expenditure. Second, the way in which education is measured and modelled can affect the empirical results (Krueger & Lindahl, 2001). Finally, it is important to incorporate feedback effects between education and government expenditure relationship to correctly gauge the expenditure effects of enhancing education (Ranis, Boozer, Stewart, & Suri, 2003).

The empirical literature on the effects of health on government expenditure is relatively thin. Conceptually, a healthy person cannot only work more effectively and efficiently, but also devote more time to productive activities. Based on microeconomic evidence, Strauss and Thomas (1998) argue that health status explains variation in wages at least as much as education levels. Recent experimental or quasi-experimental studies such as Thomas and Frankeberg (2002) and Baldacci, Clements, Gupta and Cui (2008), have found that specific health sector interventions help recipients raise government expenditure significantly, and general indicators of health and nutrition status are significant predictors of economic success.

Research at the macro level can better capture the potential externalities of health sector interventions, and several recent studies support the positive contribution of health capital to expenditure. Barro (1996), Bloom and Canning (2003) find that health indicators positively influence aggregate output. For the countries in their sample, about one-fourth of government expenditure was attributable to improvements in health and improvements in health conditions equivalent to one more year of life expectancy are associated with lower expenditure of up to 4% points per year.

Studies examining the impact of government spending on social services have produced mixed results both for industrial and developing countries. For example,

based on cross-sectional data for developing countries, De Mello (2003) find that government spending is an important determinant of education and health outcomes. They also find that education spending has a greater effect on government indicators than health outlays. The positive effect of social spending on social services is also

Similarly, a number of studies find that the contribution of health spending to health status as measured by infant mortality or child mortalityis either small or statistically insignificant. In contrast, Gupta, Verhoeven, and Tiongson (2003) find a positive relationship between public spending on health care and the health status of the poor.

Methodology

South Africa reserve bank

3.2. Model Specification

GEXP = α0 + α1EDU + α2HLTH + α3TAX + μt
(3.2)

3.4. Estimation Techniques

Generalised impulse response function

According to Asteriou and Hall (2011), the impulse response function was introduced to overcome the problem of interpretation of the VAR model since it lacks a theoretical background. An impulse response function identifies the responsiveness of a dependent variable in a VAR model to a shock in the error term. According to Sims (1980), impulse response allows one to trace out the effects of different shocks over time on variables in a system of equations in a VAR model. In this study, the Generalised Impulse Response Function (GIRF) was used in the place of the Impulse Response Function (IRF) since GIRF is not sensitive to the way variables are ordered in VAR. Furthermore, IRF gives distorted results if important variables are omitted. Enders (2010) presents the GIRF of a VAR of variable y_t as:

$$y_t = \sigma V_t + \sum_{i-1}^{\infty} \Pi_i y_{t-1} + \varepsilon_t$$

.....(3.34)

where V_t stands for the deterministic vector of the variables and ε_t is the error term. Since y_t is forecast n steps ahead, the equation above is expressed as:

$y_{t+n} - E\{y_{t+n} \mid \lambda_t\} = \sum_{j=0}^{n-1} C_j \varepsilon_{t+n-j}$ with λ_t being the set of information of y_t and V_t the time path. C_j being the $C_j = \sum_{i=1}^{\min k, j} \Pi_i C_{j-i}$ and $C_0 = 1_p$ where $j \geq 1$.

The GIRF becomes:

$GI_X(n, \sigma, \lambda_{t-1}) = E[y_{t+n} \mid \varepsilon_t = \sigma, \lambda_{t-1}] - E[y_{t+h} \mid \lambda_{t-1}]$ .....(3.35)

where σ is the known vector, $GI_x(h, \sigma, \lambda_{t-1}) = C_h \sigma$ represents a VAR that depends on the shock of σ.

Variance decomposition

Variance decomposition reveals shocks that are mostly explained by variation in a variable over time. The forecast error variance decomposition tells the proportion of movements in a sequence due to its own shocks versus shock to other variables (Enders, 2010). When the total forecast error variance is explained by shocks of other variables, then the variable is endogenous and if the total forecast error variance is explained by shocks in the variable itself, then the variable is exogenous.

Enders (2010) explains variance decomposition starting with a VAR model

$x_t = A_0 + A_1 x_{t-1} + e_t$

.....(3.36)

where A_o and A_1 are known and have to forecast i time ahead. Forecasting one period ahead brings the equation to $x_{t+1} = A_0 + A_1 x_t + e_{t+1}$ and taking the conditional expectation of x_{t+1} to obtain $E_t x_{t+1} = A_o + A_1 x_t$ and the one step ahead forecast error is: $e_{t+1} = x_{t+1} - E_t x_{t+1}$.

4. Results

4.1. Introduction

Stationarity: All the variables are stationary at first difference, I(1).

VAR Lag length selection: As show in Table 1, the lag length of 1 was chosen.

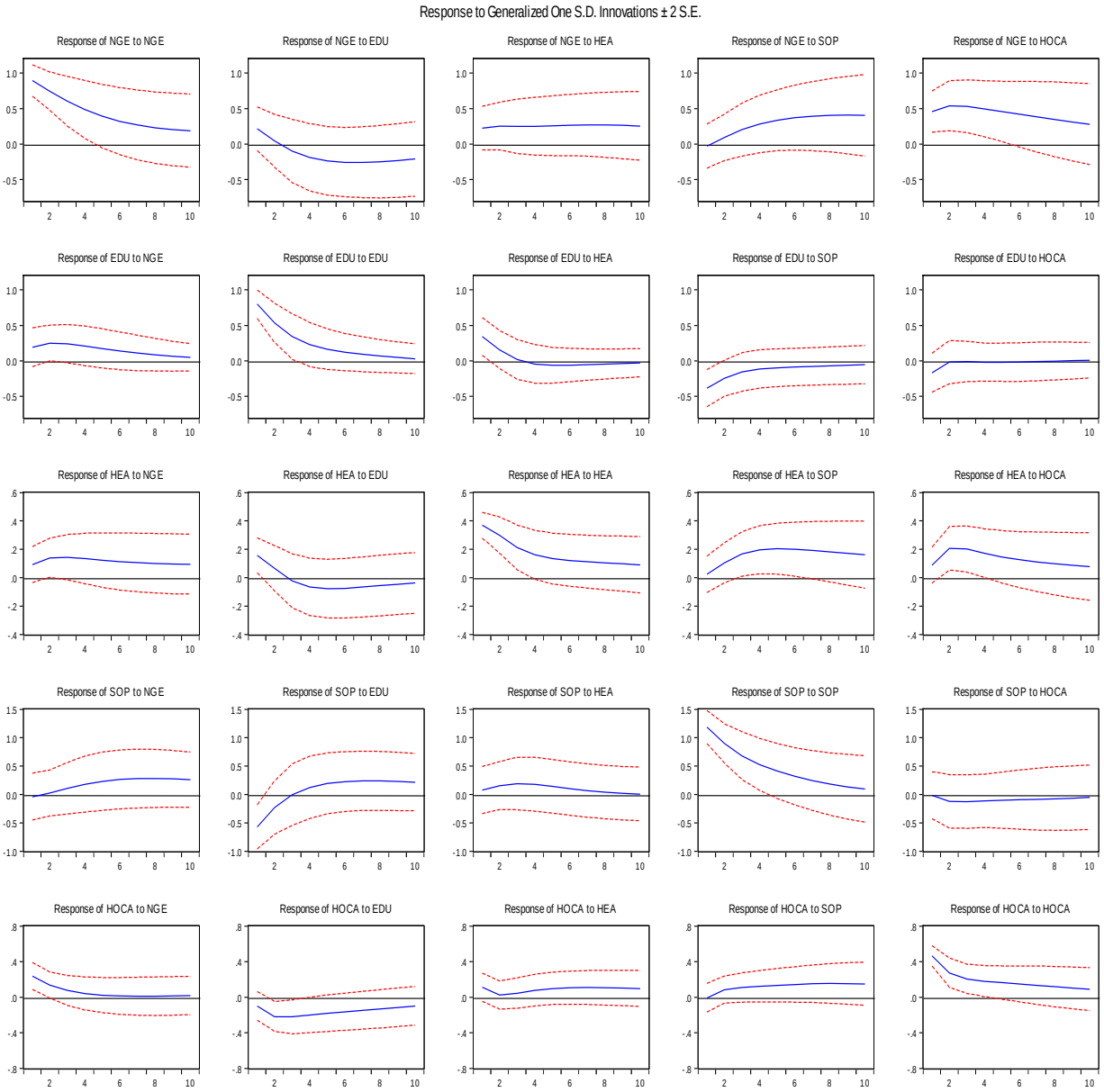
Table 1: VAR Lag length selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-226.6783	NA	1.337240	14.47989	14.70891	14.55581
1	-126.5360	162.7311*	0.012482*	9.783502	11.15763*	10.23899*
2	-99.57841	35.38188	0.012496	9.661151*	12.18038	10.49621

* indicates lag order selected by the criterion

Results of Generalised Impulse response analysis: Figure 1 shows the response results. GNE response positively to shock from EDU during the first year and as from the second year the response is negative while EDU response positive to shock from GNE. GNE and HEA response positively to shocks from each other. Furthermore, during the first year, there is no response from shocks between GNE and SOP, but as from the second year, the response is positive. GNE response positively to shocks from HOCA while HOCA response positively during the first three years, as from the fourth year, there is no response.

Figure 1: Results of Generalised Impulse response



Results of Variance decomposition: Variance of shocks in NGE is mostly explained by itself over years and with 57.76% during the tenth year. During the tenth year, shocks is mostly explained by HEA with 20.45% then followed by EDU with 17.66%. The least is HOCA with 2.82% followed by SOP with 4.29%.

Table 2: Variance decomposition results

S.E.	NGE	EDU	HEA	SOP	HOCA
0.894068	100.0000	0.000000	0.000000	0.000000	0.000000
1.184810	96.34440	1.367353	1.261244	0.017764	1.009237
1.377621	90.45919	4.336664	3.374615	0.128275	1.701256
1.527238	83.69970	7.770042	6.067205	0.362497	2.100559
1.653607	77.00147	10.87235	9.048562	0.727149	2.350473
1.764707	70.90436	13.33830	12.01201	1.222712	2.522615
1.863647	65.63974	15.14733	14.72339	1.843538	2.646005
1.951647	61.24434	16.39288	17.05331	2.576257	2.733206
2.029373	57.65305	17.19466	18.96011	3.400540	2.791640
2.097464	54.75983	17.66353	20.45805	4.291401	2.827189

5. Conclusion

Over years, much of government expenditure is not geared towards the provision of social services. In conclusion the study examined the impact of government expenditure on basic social services in South Africa. Bearing in mind the variables that were used, such as education and taxation which are positively related to GEXP, while health have a negative impact on GEXP. The results shows that the level of level of expenditure is important on education, since well it creates growth and expansion of literacy in South Africa, taxation can also be considered as important variable since well it has a relationship with GEXP and also reduces government deficit, it has a crucial impact when allocation of funds takes place.

6. Policy Recommendation

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