

Measuring the effectiveness of government expenditure for performance

Executive Summary

The role of effective and efficient government expenditure in facilitating growth is crucial for the long-term protection of the most vulnerable, especially at a time of crisis. To assess the effectiveness of public expenditure in South Africa, the Commission undertook a study that measured the impacts of public spending on growth and socioeconomic outcomes. More specifically, the study employs rolling regressions to compute fiscal multipliers to investigate government expenditure on economic growth, unemployment and poverty. The analysis found that government expenditure plays a marginal role with inconsistent effects on increasing economic growth, and decreasing unemployment and poverty, as represented by the low multiplier effects. The Commission recommends that the Minister of Finance investigates strategies to improve the multiplier effect since the current low returns or multiplier effect of public expenditure undermines the fiscal credibility as it brings the impact of government expenditure, and the capacity and capability of the state as a whole into question.

Background

There is consensus in the literature that the government is an essential player in economic growth through efficient public spending to accelerate economic growth, thereby reducing poverty and unemployment.

Many studies have investigated the effect of government, through its expenditure and taxes, on the economy. Most of these studies conclude that government is an essential player in the economy and that government expenditure can accelerate economic growth and reduce unemployment and poverty through the multiplier process.

Fiscal multipliers, or simply Keynesian multipliers, are defined as the ratio of a variation in output given a unity exogenous change in the fiscal balance, which could be presented by a variation in government expenditure or tax



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revenue. The effectiveness of government spending can be explained by various growth theory models, as suggested by the Keynesian school of thought. Those include Wagner's law (Wagner, 1883, 1890) and Barro's endogenous growth model (Barro, 1990).

Notable studies have investigated government expenditure on economic growth, poverty reduction and unemployment in South Africa. Most of these studies used computable general equilibrium (CGE) and the social accounting matrix (SAM) for this purpose. Although these studies conclude that government expenditure positively affects economic growth, it reduces poverty and accelerates employment generation. However, they only give one aggregate multiplier (coefficient) of the entire period, leaving out crucial dynamic information about the trends and movements of the fiscal multiplier for each period (every year) over time.

This research addresses this gap by employing a rolling regression on two model specifications: Model (I) examines the simple, direct relationship between economic growth and government expenditure, whereas Model (II) adds on the variabilities of exogenous variables of investment, population and openness. The rolling regression allows for the computation of multiplier effect¹ dynamics.

The rolling regression results in Table 1 show that, for the most part, the overall multiplier effect of government expenditure on GDP growth is positive, except for some periods where the multiplier effect is observed to be negative. It is worth noting that interpretations of the fiscal multipliers derived from the rolling regression technique should be done by looking at their trends and not dwelling too much on one period. Government expenditure had its worst impact during 2007–2009, where it reached significant negative values, especially after controlling for further exogenous factors as specified in Model (II). This clearly shows that, even before the onset of the 2008–2009 global crisis, the multiplier effect of fiscal expenditure was already showing signs of decay, if not adverse against economic growth. Since then, the highest positive effect of government expenditure on GDP was in 2013, where it reached a peak of 2.52, but retreated again and remained relatively low, at 0.21 in 2018, suggesting that government expenditure was not fulfilling its potential in boosting GDP.

Regarding the impact of expenditure on poverty, the multiplier effect has been largely negative over time, suggesting that government expenditure reduces poverty in the main. This is especially the case in the period before 2010 according to the Model (I) specification, and also after 2010 according to Model (II). This means that government expenditure reduced poverty significantly during this period. In analysing the effect of government expenditure on unemployment, the multiplier is also generally negative, but weakly positive in specific years, indicating that government expenditure reduces unemployment, although it is somewhat uncertain in its effect.

¹ Ideally, the multiplier effect, as a coefficient, should be close to or greater than 1. A fiscal multiplier of less than 1 suggests that economic activity is not rising faster than government expenditure. A negative fiscal multiplier could indicate that there is a possibility of leakages, capacity constraints or crowding-out effects, resulting in an opposite impact of government expenditure on the outcome variable.

Research findings

Table 1: Multiplier effect of government expenditure on GDP, poverty and unemployment

	GDP		Poverty		Unemployment	
	ROLLCOEFF_GE		ROLLCOEFF_GE		ROLLCOEFF_GE	
	Model (I)	Model (II)	Model (I)	Model (II)	Model (I)	Model (II)
1990						
1991	-0.45		1.67			
1992	-1.16		2.64		1.94	
1993	1.05		4.97		5.98	
1994	3.91		7.22		1.63	
1995	-0.49		-5.77		-6.62	
1996	1.13		-2.30	0.64	2.94	0.89
1997	1.21	1.00	-3.94	1.87	-4.08	0.34
1998	-0.22	0.53	-5.14	0.79	1.28	0.11
1999	5.47	0.16	-2.15	-0.04	8.19	-0.04
2000	1.43	0.34	-1.00	-0.70	-4.66	-0.13
2001	0.87	0.59	-2.71	0.30	6.03	0.74
2002	0.81	0.75	-8.74	0.30	1.54	0.74
2003	0.53	0.59	-3.05	0.44	-4.71	-0.62
2004	0.87	0.58	-1.31	1.03	-1.36	6.35
2005	1.02	-0.03	-1.92	-2.19	-1.48	-0.86
2006	1.14	0.28	-2.34	1.42	-3.50	-1.85
2007	1.32	-0.21	-6.83	-1.49	-9.65	-0.00
2008	0.56	-0.36	-7.92	0.25	-1.50	1.98
2009	-0.34	-0.31	-5.84	0.07	4.61	3.47
2010	1.02	0.57	-4.93	-5.81	7.21	-0.19
2011	1.19	0.78	1.76	-6.70	-2.60	-3.75
2012	0.64	0.84	2.50	-6.27	3.95	-5.04
2013	0.81	2.52	2.54	-4.00	-9.00	-6.35
2014	1.09	0.27	6.31	-3.20	3.19	1.58
2015	-1.55	0.37	-1.41	-1.33	-5.46	0.38
2016	0.18	0.37	2.45	-0.94	1.04	0.75
2017	6.91	0.27	-3.46	-0.23	4.07	0.17
2018	0.42	0.21	1.95	-1.32	-1.28	-0.43

Source: Commission's own computation based on the World Development Indicators

Conclusion and recommendation

The results suggest that the change in GDP, given a fiscal policy shock, is robust as it remains statistically significant and in line with the economic theory, however marginal in impact. The analysts also find that after controlling for other exogenous factors (i.e. Model II), the multiplier effect of government expenditure on GDP diminished until 2018. Government expenditure had its worst impact between 2007 and 2009, where it is associated with a negative outcome. This implies that government efforts (i.e. expenditure) failed to improve welfare during the 2008 global financial crisis. Furthermore, the results indicate that government expenditure and gross fixed capital formation positively impact GDP.

In other words, government expenditure and investment play a role in increasing economic growth, however inconspicuous. The low multiplier in the last two years (according to the best model II) may suggest that economic activity has not risen faster despite significant government expenditure. It should be noted that the effect of government expenditure on GDP should not be evaluated based on only one or two years, but the analysis should be done by looking at the entire period of estimation. Even though the more appropriate model, the multiplier on growth, is small, government expenditure is still positive.

The Commission makes the following recommendation:

1. Regarding the fiscal multiplier effect, the currently low returns or multiplier effect of expenditure on the GDP is of concern as it indicates that returns to spending are low. This needs further investigation by the Minister of Finance to improve the multiplier effect. Additionally, data to determine the size of the multiplier since 2018 is needed, especially as the economic environment has since changed.

References:

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