European Journal of Business and Management
ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online)
Vol.17, No.2, 2025

An investigation into how Government Revenue and Expenditure, Changes in Imports, and Total Investment, Impact the Gross Domestic Product (GDP) of Zambia

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Abstract
The study was aimed at investigating the relationship of factors such as Government Revenue and Expenditure, Imports as well as Foreign Direct Investment have with Gross Domestic Product of Zambia. In trying to assess the impact of the predictive variables, secondary data was used as per IMF data on the country of Zambia, from 2012 to 2023. A multiple linear regression analysis was used to estimate the linear relationship between the independent variables and dependent variable. It was noted that indeed there exists a relationship between Revenue generated and the GDP. This relationship is quite significant. The economy of Zambia would grow by 1.5 for any 1 unit of revenue collected. At the same time, expenditure has a significant negative impact on growth with downward movement of 0.8 for every unit of spending. In addition, there exists a weak relationship between the Changes in Imports and GDP of 0.08 per unit change. The impact of investment was positive, though not very significant at 0.09. Owing to the significant positive impact that revenue collection has on the growth of the economy, policy makers should continue to look at means of broadening the tax base as well as consider carefully the tax relief measures. The key remains to ensure that revenue collection is equitable and optimal supported by strong institutional frameworks to avoid significant leakages. Running on a budget deficit will weigh down on growth given the impact that expenditure has on economic growth. This entails that the fiscal space should be supported largely by revenue generation and less of debt.
Keywords: Government Revenue, Expenditure, Total Investment
DOI: 10.7176/EJBM/17-2-03
Publication date: February 28th 2025

1. Introduction

Achieving impactive economic growth in each fiscal cycle has remained a key target for various governments across the globe, including the government of Zambia. There are several factors that can lead to economic growth. However, some of the key drivers anchor on the fiscal activities such as revenue generation and sustainable spending. One of the major ways that countries raise their revenue is through the collection of taxes. The revenue collected can be used to finance investments in human capital, infrastructure, and the provision of services for the citizens. However, in recent past, fuelled by multiple crisis, revenue collection as a measure of GDP has significantly reduced for several developing countries, and the need to increase collection has become an urgent one, more so for countries collecting below 15% of GDP. To resume economic growth, reduce poverty, and support climate action, countries need to increase tax collection and make tax systems more equitable and efficient (World Bank Group, 2024).

The Government of Zambia has set up various National Development plans over the years, with the current one standing as the 8th National Development Plan (8NDP), which runs from 2022 to 2026. These strategic intents are used to drive the vision of economic growth and steps to be implemented to achieve these goals. One of the key pillars of the 8NDP is achieving higher and inclusive economic growth. The overall aim of an all-inclusive economic growth is to improve the living standards of citizens as well as reduce poverty and inequality by creating conditions for strong and inclusive growth. The other key pillar covered under the plan is achieving Fiscal Policy and Reform (Ministry of Finance and National Planning, 2022). Various targets have been set to achieve fiscal sustainability, including enhancements in domestic resource mobilisation, expenditure rationalisation and debt restructuring. Tax policy reforms have been instituted with the view of enhancing compliance while streamlining the structure of tax incentives to support economic transformation. Expenditure percent of GDP is expected to reduce over the 8NDP period through significant reforms on the subsidies as well as rationalising spending on capital projects. At the same time, attraction of Investments such as Foreign Direct Investments (FDI) remain a priority. Government intends to provide an enabling environment that will ensure

increased FDIs to aid economic activities in various sectors, driven by the mining sector (Ministry of Finance and National Planning, 2022).

However, despite many proposed interventions to drive economic growth, Zambia like many other countries has experienced low growth rates in the recent past and most especially post the Covid_19 era. Growth for 2024 is projected at 1.2 percent because of severe constraints in the agriculture and electricity output (International Monetary Fund, 2024). The question to be answered is 'how do these targeted intervention under the 8NDP correlate with economic growth, in the short to medium term. Will they yield the desired results if fully pursued. The research is based on correlation of the independent and dependent variables and not causalities.

2. Literature Review

2.1 Empirical Review

There is a lot of work done by researchers to establish the impact that fiscal activities, investment and imports have on economic growth. Mwale & Mulenga (2024) when studying fiscal policy and economic growth of Zambia concluded that increase in tax revenue has a positive long-run significant effect on Zambia's economic growth, while external debt and public expenditure had a significant negative effect on economic growth. Owing to this, there was need for the Government of Zambia to widen the tax base to reduce deficits and to also ensure debt was reduced. Mubanga (2022) also noted that despite the various tax types giving varying degrees of impact on economic growth, they all had a positive effect on the growth of Zambia's economy. The revenue generation through tax would lead to growth of the economy and thus the need for the government to ensure efficiency of tax collection as well as provision of digital solutions to cover tax collections. The positive relation also entails policymakers reduce on tax exemptions or incentives, which narrowed the tax base. The findings were in line with Mpundu, Mwafulirwa, Chaampita, & Salwindi (2019) who noted that government expenditure had negative effects on GDP both in the short run and long run. Thus, there was need for government to institute fiscal discipline.

Ayana, Demissie, & Sore (2023), when studying the effect of government revenue-institutional quality interaction on the economic growth of 43 Sub-Saharan Africa countries for a period of 2012 to 2022 noted that revenue combined with institutional quality promotes the economic growth. At the same time, FDI and openness to trade were noted as key contributors to economic growth. To benefit from revenue, there was need to have effective and efficient Institutional structures in place. Raifu & & Raheem (2018) when reviewing the impact of government revenue on economic growth in Nigeria noted that government revenue was a significant factor for economic growth in Nigeria. Thus, there was need for effective and efficient use of government revenue to aid this growth. Butkiewicz & Yanikkaya (2011) noted that total government expenditure had a negative growth effect for some developed nations in certain groupings. As for developing nations, spending on consumption had the most negative effect and thus there was need for governments to spend less on consumption and more on capital expenditure to aid economic activities.

Babatunde, Ibukun, & Oyeyemi (2017), when looking at taxation revenue and economic growth in Africa noted that there was a significant positive relationship between tax revenue and Gross Domestic Product. It was noted that tax revenue raises the growth rate and that governments were able to use tax revenue for further productive investment to drive economic growth. The countries studied largely used taxation as a key internally generated revenue tool to boost economic performance. The result of the research conducted was in line with the Ibn Khaldun's theory of taxation which points to a significant positive impact that a sustained optimum tax rate has on the general revenue generation and the output of the economy. Olufemi, Jayeola, Oladele, & Naimot (2018) when studying the impact of taxation revenue on Nigeria's economic growth also noted that the role of taxation in nation's building is very significant. Taxation remained a key social political and economic tool for economic prosperity. Governments should ensure tax administrative functions were efficient and effective to capture as much tax as possible. Harelimana (2018) noted that using taxes helped to stimulate the growth of the economy of Rwanda and thus confirming that there was a significant relationship between taxation and the Rwandan economic development. The Government used taxes for building public infrastructure like roads, schools and hospitals, which lead to increased economic activities. Stoilova & Patonov, (2013) also observed that there was a clear and significant positive impact of the direct taxes on economic growth in the EU Countries.

Kaddouri & & Benelbar (2024) when conducting a review of the relationship between foreign direct investment and economic growth based on empirical evidence, noted that FDI had a positive impact on economic growth.

Gautam (2024) observed that FDI has the effect of stimulating economic growth by promoting productivity and efficient resource utilization, as well as fostering positive externalities in the industry sector. Other added benefits included capital accumulation, employment generation as well as being a source of foreign exchange through equity capital and exports of goods and services. On the other hand, Mawila & Nyambe (2015) when reviewing the impact of FDI on economic growth in Zambia noted that FDI had no impact on economic growth in Zambia. Thus, the Zambian economy had not benefited from the FDI in the period reviewed of 1980 to 2012. This was attributed to failure to meet some of the preconditions of ensuring successful use of FDI. However, this finding was contradicted by the finding of Yangailo (2024) who noted that FDI had a positive impact on economic growth in Zambia after a review done that covered a period of 1994 to 2023. The results of the review showed the need for Zambia to strengthen its institutional framework, improve infrastructure and invest in human capital to sustain FDI inflows and reduce on economic vulnerabilities.

Sari & Sasana (2022) when looking at impact of government revenue and expenditure on economic growth noted that imports had a positive impact on GDP in the short run. However, they had a negative impact in the long run leading to a neutral impact on GDP overall. Imports can have a significant positive impact on economic expansion in the short term. On the other hand, exports had a negative impact on GDP both in the short and long run. At the same time, government expenditure had no effective on GDP in the short run while having a negative impact in the long run.

3. Research Methodology

3.1 Research Design

The study applied quantitative method based on secondary data from the IMF data source, using a descriptive approach, with the aim of examining the existence of a linear relationship between the factors under review, which included Government Revenue, Government Expenditure, Foreign Direct Investments and Changes in Imports and the dependent variable which is Economic Growth represented by GDP. Data was collected from the IMF statistics on Zambia based on the October 2024 world economic data updates. The data focus was from 2012 to 2023, a period of 12 years.

3.2 Data Processing and Analysis

Descriptive data analysis was applied, using multiple linear regression analysis. This was used to determine the relationship between the dependent variable (Gross domestic product, at constant prices), and the independent variables. The study used the regression analysis and correlation coefficient as outlined below.

$$\mathbf{GDP = \alpha + \beta 1INV + \beta 2IMPORTS + \beta 3REV + \beta 4EXP + \varepsilon}$$

Where, INV = Total Investment Measured as a percent of GDP

IMPORTS = Volume of imports of goods and serviced as percent of GDP

REV = General Government Revenue as a percent of GDP

EXP = General Government Expenditure as a percent of GDP

Table 3.1 – IMF Data

	Gross domestic product, constant prices - Percent change	Total investment- Percent of GDP	Volume of imports of goods and services - Percent change	General government revenue - Percent of GDP	General government total expenditure - Percent of GDP
	GDP	**Inv.**	**Imports**	**Rev**	**Exp**
2012	7.598	31.518	24.863	18.695	21.852
2013	5.057	33.803	16.373	17.629	24.025
2014	4.698	34.069	-6.919	18.895	24.328
2015	2.92	42.805	0.676	18.77	27.648
2016	3.777	38.206	-8.205	18.237	23.928
2017	3.504	41.002	12.67	17.475	24.974
2018	4.035	38.586	6.48	19.424	27.733
2019	1.441	39.262	-20.297	20.413	29.82
2020	-2.785	32.245	-17.469	20.268	34.031
2021	6.235	31.367	13.598	22.369	30.504
2022	5.25	26.981	23.16	20.383	28.203
2023	5.397	31.078	-1.768	21.451	27.933

3.3 Test of Significancy

Table 3.2: Model Summary

Regression Statistics	
Multiple R	0.991131
R Square	0.98234
Adjusted R Square	0.972249
Standard Error	0.440872
Observations	12

There were 12 observations between 2012 and 2023. The results showed that the predictor variables influenced the outcome up to 97.2 percent with 2.8 percent being influenced by other factors outside the model as reflected in the adjusted R square position of 0.9722.

Table 3.3 - ANOVA determinants of GDP

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	75.683	18.921	97.346	0.000
Residual	7	1.361	0.194		
Total	11	77.044			

The sum of squares (SS) showed that the outcome of the analysis was largely due to the model up to 75.683 with randomness accounting only for 1.361 of the total position of 77.044. Degree of freedom was 4 given the 4 independent variables and the intercept. The F Statistic of 97.346 showed that the independent variables were jointly significant in explaining the dependent variable.

Table 3.4 The Regression Model Results

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	(7.666)	3.220	(2.380)	0.049	(15.280)	(0.051)	(15.28)	(0.051)
Inv.	0.093	0.038	2.446	0.044	0.003	0.182	0.003	0.182
Imports	0.081	0.011	7.059	0.000	0.054	0.108	0.054	0.108
Rev	1.537	0.151	10.154	0.000	1.179	1.894	1.179	1.894
Exp	(0.809)	0.063	(12.759)	0.000	(0.959)	(0.659)	(0.959)	(0.659)

The intercept was -7.66, meaning that this would be the position held when all independent variables were zero. Variables with positive coefficients were Total Investment (+0.093), Imports (+0.081) and Revenue (+1.537). Government expenditure had a negative coefficient of -0.809. The result led to a predicator equation of;

GDP = -7.666 + 0.093INV + 0.081IMPORTS + 1.537REV + 0.809EXP + 0.440872

The P-Values showed very strong relationship of independent variables such as Revenue, Expenditure and Imports with values of 0.000 while Investment had the weakest link with a P-Value of 0.044.

3.4 Discussion of the findings

The study looked at how the fiscal space, investments and imports impact economic growth in Zambia based on the IMF Data from 2012 to 2023. The real GDP was considered as the dependent variable while the independent variables included Total Investment, Imports, Government Revenue and Government Expenditure. The results showed that of the four variables considered, Government Revenue had the most significant positive impact on Growth. For every revenue raised, the impact on growth would be over 1.5. At the same time, expenditure had the most significant negative impact on growth. For every expenditure, there would be a negative growth of 0.8. Investment and Imports had minimal contribution, though positive one. Any increase in Total investment would lead to growth of 0.093 while changes in imports had a positive impact of 0.081. The implication of the outcome is such that a budget surplus is expected to contribute to the growth of the economy more than a deficit would. Where revenue was consistently above expenditure, the outcome would be significant growth owing to the relationship between real GDP and revenue. On the other hand, a persistent deficit would weigh negatively on the growth of the economy given the negative relationship between growth and expenditure.

4. Conclusion and recommendations

4.1 Conclusion

The study was aimed at looking at how factors such as Government Revenue and Expenditure, Imports as well as Foreign Direct Investment relate to Gross Domestic Product of Zambia. In trying to assess the impact of these factors, secondary data was used as per IMF data on the country of Zambia, from 2012 to 2023. A multiple linear regression analysis was used to estimate the linear relationship between the independent variables and dependent variable. It was noted that indeed there exists a relationship between Revenue generated and the GDP. This relationship is quite significant. The economy of Zambia would grow by 1.5 for any 1 unit of revenue collected. The findings are in line with reviews done by other researchers such as Mwale & Mulenga (2024) and Mubanga

(2022). At the same time, expenditure has a significant negative impact on growth with downward movement of 0.8 for every unit of spending. This was in line with the findings by some researchers such Mpundu, Mwafulirwa, Chaampita, & Salwindi (2019). At the same time there exists a weak relationship between the Changes in Imports and GDP of 0.08. This positive relationship is supported by the findings of Sari & Sasana (2022). The impact of investment was positive, though not very significant at 0.09. The positive relationship is supported by the findings of Yangailo (2024).

4.2 Recommendation

Owing to the significant positive impact that revenue collection has on the growth of the economy in the short to medium run, policy makers should continue to look for means of broadening the tax base. At the same time, tax relief measures should be considered carefully as they may result in lower collection of revenue that can impact economic growth negatively. Policy makers should ensure that revenue collection was equitable and optimal, supported by strong institutional structures to avoid significant leakages. Running on a budget deficit will weigh down on growth given the impact that expenditure has on economic growth. This entails that the fiscal space should be supported largely by revenue generation and less of debt. This will broadly result in the push towards the attainment of the 8th National Development Plan goals of ensuring debt was at sustainable levels and revenue collection was enhanced.

The findings support the plans that Government has committed to under the 8NDP to put in place measures that will enhance domestic revenue mobilisation and ensure that its contribution towards the overall resource envelope was increased. Thus, the move to ensure that the tax systems were streamlined, creating a predictable tax environment as well as the use of ICT platforms to arrest revenue leakages and increase compliance, will contribute towards economic growth once fully embedded. The space created by enhanced revenue collections can be used to drive the Economic Transformational Pillar, the Human and Social Development Pillar, as well as the Environmental Sustainability Pillar under the 8NDP. The move to bring expenditure versus GDP down from 33% in 2021 to 30% in 2026 per 8NDP, through significant reforms on subsidies, is a step in the right direction towards narrowing the deficit and reducing on the debt position in the short to medium term. The Debt Management strategy has resulted in the debt restructuring of most of the external stock, creating room for the use of the revenue towards projects that could steer economic activities and support the health of citizens. While this is recommended, push towards enhancing revenue collection and the use of revenue effectively is what will drive economic growth in the short and medium term.

To support sustainable economic growth, attention should be paid to sustainable utilisation of resources, which are the raw material used to create wealth for the nation. Policy makers should continue to pursue the building of resilience to the adverse of the effects of climate change that have impact on the ability to collect tax revenue, especially when economic activities fall due to climate effect. The recently projected growth levels of 1.2% induced by drought in the 2023/24 season are a reminder of the importance of paying attention to sustainability issues, as supported by the 8NDP. Measures aimed at promoting green growth, safeguarding the environment and natural resources, enhancing climate change mitigation and adaption as set in the 8NDP should be operationalised to ensure sustainable growth.

4.3 Limitations

The study encountered some limitations that might require further studies. The study did not look at why the factors identified are able to have such effected-on GDP. The ability to raise revenue is good but the question that needs to be answered is how this revenue generated has contributed to changes in GDP. At the same time, revenue taken is total revenue. While most of the revenue comes from taxes, there is need to split revenue streams and to see their impact on GDP. The period of the research is for a period of 12 years. This is short to medium term and thus the long-term effects may need to be examined as well. Issues of time lag of certain measures such as tax relief need to be measured as well to have a comprehensive analysis. The potential benefits of tax relief in the medium to long term include the attraction of FDI in various sectors. FDI can have a two-pronged benefit. It can lead to economic growth while on the other hand, it can result in the creation of more jobs and peripheral benefits for contractors and suppliers, which might result in more tax collections. Thus, the need for longitudinal studies of the impact of tax revenue on the economy, considering any accrued benefits arising from tax relief measures that might only arise over a long period of time.

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