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Effects of Foreign Direct Investment on Economic Growth in Zambia

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Abstract

This study examines the factors influencing Zambia's economic growth, focusing on domestic credit, foreign direct investment (FDI), and external demand. Using annual data from 2000 to 2022, the study finds that these factors contribute to economic growth. Notably, FDI and external demand have a greater impact on the non-mining sector than the mining sector. The study highlights the importance of ensuring FDI is utilized effectively in developing countries such as Zambia, given that its potential benefits can be deceptive. With over 80% of FDI flowing into the mining industry, the study investigates whether this structure affects FDI's impact on economic growth.

The analysis reveals a long-run equilibrium between FDI and GDP growth, indicating a causal relationship between the two. The study emphasizes the need for careful consideration of FDI in developing economies, ensuring it is used for the right reasons, at the right times, and under the right institutions. Overall, the study provides insights into the dynamics of economic growth in Zambia, a country heavily reliant on natural resources.

Keywords: FDI, Mining sector, Economic Growth, ADF Unit Root test, Zambia

1. Introduction

Economic growth is regarded as a necessary prerequisite for economic development, poverty alleviation, and the reduction of income disparities in developing nations, particularly in Africa (Ferdinand et al. 2015; Anyanwu, 2014). Foreign Direct Investment has been adopted by many developing nations, including Zambia, as a suitable means of boosting employment, reducing poverty, modernizing, and achieving economic growth (GDPGR). This study looks into how Foreign Direct Investment affects economic growth in Zambia, an economy that is heavily dependent on natural resources, such as copper. Prior studies have been carried out to examine the overall impact of foreign direct investment on economic growth. The growing FDI flows to the mining industry are the subject of this study. It seeks to understand why, despite consistently high FDI flows, Zambia's growth has not been dynamic. Three primary likely effects will be covered.

First off, what effect have FDI inflows had on growth over the years?

Secondly, what is the impact of Foreign Direct Investment concentration in the mining sector on the nation's chances of attaining dynamic growth?

Lastly, how has Zambia's investment policy encouraged foreign direct investment (FDI) in industries other than mining?

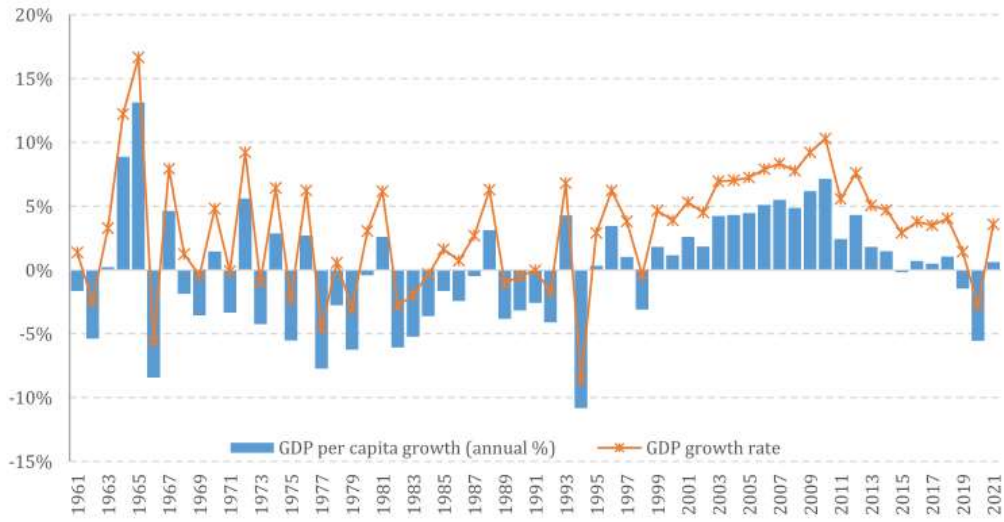
The study's premise is that Foreign Direct Investment (FDI) can and does promote economic growth when it goes into high-tech, export-focused manufacturing as well. Does Zambia's GDPGR (gross domestic

product) benefit from the inflow of Foreign Direct Investment (FDI)? The majority of empirical research on various nations and areas has discovered that FDI positively and statistically affects GDPGR. Therefore, Zambia will only be willing to welcome more foreign direct investment (FDI) and reap the benefits of it if the FDI has a noteworthy and positive effect on GDPGR.

1.1 Background of FDI

Zambia's 1991 economic liberalization was interpreted in two ways: it encouraged various forms of foreign investment while also permitting the existence of domestic private enterprise. Zambia has been a major recipient of Foreign Direct Investment (FDI) due to its status as a developing country with abundant natural resources, cheap labor, and excellent market access.

According to the World Bank's "World Development Indicators," there should be a relationship between FDI and GDPGR in Zambia given the significant and simultaneous increases in both variables (2013). This study examines the causal relationship between FDI and GDPGR in Zambia, adding empirically to the literature on economic growth as none of the prior studies has only looked at Zambia as a case study. I use econometrics in time-series methods in this study, including the Granger causality test, the Johansen co-integration test, the vector error correction model (VECM), and the Augmented Dickey-Fuller (ADF) unit root test. I use them to look into whether there is a relationship between FDI and GDPGR.



Source: Zambia Statistics Agency and World Bank WDI In 1991,

Figure 1: The government initiated economic reforms to transform the centrally planned economy into a market oriented one. The Reforms had no immediate impact on growth; instead, between 1991 and 1995, it continued to decline, averaging -0.2 percent annually.

Moving beyond the debate and analysis of previously published literature, statistical data reveals that real Gross Domestic Product (GDP) in Zambia was $1.7 billion in 1970 and $19 billion in 2011, while the values of Foreign Direct Investment were $0.09 billion in 1970 and $1.9 billion in 2011—with that margin. The large margins in these areas suggest that FDI—the beneficial kind of FDI—and economic growth ought to be related. It's clear that FDI inflows to Zambia have increased over the last ten years, with the construction and mining industries accounting for the majority of these inflows. Over the previous ten

years, FDI has also been responsible for a steady increase in employment, particularly in the mining and construction sectors.

This research will focus on the effects of FDI within the framework of a nation that depends on natural resources rather than the effects of FDI generally. More specifically, it will examine the impact on economic growth by analyzing the spatial dominance of foreign direct investment in Zambia.

A nation's ability to produce more goods and services is a sign of its economic growth. Gross Domestic Product (GDP), which calculates a country's annual output based on its local production base, is a common way to measure it. The nation was reclassified by the World Bank in 2011 from low-income to lower-middle income (World Bank, 2017). The average sector-level growth rates from 1970 to 2020 are shown in Table 1.

Table 1: Sectoral Output Growth in Zambia, 1970 – 2020

Sector	1980/1990	1990/2000	2000/2005	2005/2010	2010/2015	2015/2020	2020.2024
Average Real GDP Growth Rate	1.54	-0.33	5.06	6.71	4.07	-3.08	1.76
Agriculture	3.52	-1.65	1.1	4.18	0.99	0	18.92
Mining	1.32	-12.21	10.23	10.78	-1.43	3.19	8.8
Manufacturing	3.63	1.76	5.28	3.74	7.7	3.52	-1.65
Electricity	-2.64	2.86	2.31	5.39	3.96	3.74	3.41
Construction	-3.74	-5.17	18.15	13.31	10.34	3.85	-5.83
Wholesale & Retail Trade	NA	NA	4.84	2.97	6.6	1.21	-13.75
Transport	NA	NA	5.39	17.49	3.08	1.21	15.18
Finance	NA	NA	2.42	6.16	8.25	6.49	14.3
Other Services	-0,7	1.65	4.84	6.93	7.04	3.52	-11.55

Source: Zambia Statistics Agency and UN Stats

However, by 2014, it was difficult to continue the phenomenal growth of the early 2000s. Economic growth slowed down as public debt, inflation, and fiscal deficits rose. From an average of 6.2 percent between 2011 and 2015, real economic growth fell to 3.0 percent in 2016 and 1.4 percent in 2019. Zambia's economy is driven by the private sector, which includes foreign investors {Foreign Private Investment and Investor Perceptions (FPIIP) 2014}. As such, maximizing FDI's contribution to economic growth is necessary to enable dynamic economic growth.

Zambia’s copper mining industry has been vulnerable to low output and declining prices since 1974. Both diminishing ore deposits and a lack of capital in the industry are to blame for this low output (Ndulo and

Mudenda 2010). The capitalization issue and the pressure on the balance of payments have been largely relieved by foreign direct investments (FDI) in the mining sector, but covariate shocks like declining prices might not be as well-treated.

1.2.1 Research Objectives

The primary goal of the study is to examine the effects of Foreign Direct Investment in Zambia. The following is a summary of the specific objectives:

1. To look into how FDI affects the dynamism of economic growth.
2. To investigate potential effects of FDI on the manufacturing sector's economic dynamism?

1.2.2 Main Research Question

1. What effect does foreign direct investment have on Zambia's economic growth?
2. What is the extent to which foreign direct investment (FDI) has aided in Zambia's economic growth?
3. Can Zambia's economy experience dynamic growth due to the concentration of foreign direct investment in the mining sector?
4. Is multi-sector foreign direct investment encouraged by the current investment policy?

Literature review

In this section of the article, we will derive and thoroughly breakdown the impacts that may occur from FDI on said nations. This part vividly and consciously gives a much clearer understanding of the impacts FDI carries with it. Numerous investigations have conducted a thorough analysis of the literature regarding the factors that influence growth in an economy. In the case of a developing nation, such as Zambia itself, an unequal portion of FDI is received and it has been proven so in some Asian countries. The report gives proof that in some cases, with better economic policies, this may allow for the good kind of foreign investment. We compare studies on Foreign Direct Investment especially in resource-rich economies such as Indonesia, Malaysia, and Chile among others.

Developing nations receive an unequal portion of foreign direct investment (FDI). Some countries appear to be receiving more attention than others, as is the case in Asia, where examples include China and Singapore. Furthermore, co-movements involving Foreign Direct Investment indicate higher levels of inflows into developing nations, with a few exhibiting levels of foreign direct investment nearly matching their national economies. The amount of foreign direct investment flowing into developing nations today greatly exceeds that of authorized growth, underscoring the importance of paying close attention to how foreign direct investment is used as a tool for GDPGR.

Fig. 1. Inward FDI stock (2000 Share of GDP)

Source: UNCTAD, or the United Nations Conference on Trade and Development

A critique of the Prebisch-Singer Hypothesis was presented by Sarkar (1986). He asserted that the hypothesis was flawed because it disregarded trade between developed nations. The hypothesis, however, was restricted to trade between Latin American nations and Western nations, particularly Britain. It didn't matter in this case whether two developed nations were trading with one another. Prebisch (1950) made the primary case that Latin American nations were at a disadvantage in trade between developed nations due to the nature of the goods they were exporting, which only did not make them dependent on manufactured imports but also jeopardized their ability to industrialize.

3. Background of method implementation for analysis

The history of the Zambian economy will be covered in this section of the paper. The first element will provide the economy's structure, which will be followed by the FDI history and the investment policy. The section will then demonstrate the connection between FDI and the mining industry. Furthermore, it is explored whether Zambia's investment policy has encouraged foreign direct investment (FDI) in industries other than mining. A comparison of the mining and manufacturing sectors is presented for the purposes of the argument that has been made thus far.

3. 1 Zambia's Economy

I have divided Zambia's economic history into two main subsections for ease of reading. The first was a one-party system, while the second was a multi-party democracy. From 1964 onwards, Zambia, like the majority of newly independent economies, implemented nationalist policies. A greater GDPGR can be attained by nations with increased FDI. FDI can support GDPGR through a number of avenues. For instance, when a multinational company from one nation wishes to grow internationally, it must first either build a new facility or make an acquisition and merger in another nation. The multinational company will logically transfer its capital accumulation, advanced technology, and facilities to the host nation for either project. United Nations Conference on Trade and Development (UNCTAD) (1999) reported that foreign direct investment (FDI) stimulated growth by increasing the efficiency of total investment, citing this firm's action as evidence.

A_t (total factor productivity) is specifically added to the model to capture a vector of additional variables that might have an impact on economic growth. In accordance with Ho and Bernard (2018), can be subjected to a Cobb-Douglas function to produce:

$$\mathrm{A}_t = EXD_t{}^{\beta_2} FDI^{\beta_3}{}_t DC\_PS^{\beta 4}{}_t \quad [1]$$

where *FDI* stands for foreign direct investment, *DC_PS* stands for domestic credit to the private sector, and *EXD* stands for external demand. An enhanced version of the growth equation is obtained by substituting equation it is as follows:

$$\gamma_t = K_t^a H_t^\beta E_t^{1-a-\beta} EXD_t{}^{\beta_2} FDI^{\beta_3}{}_t DC\_PS^{\beta 4}{}_t \quad [2]$$

Equation 3, which is the result of decomposing and taking logs, is obtained and serves as the foundation for the empirical estimations in this study.

$$ln\mathrm{Y}_t = \alpha ln\mathrm{K}_t + \beta_0 ln\mathrm{H}_t + \beta_1 ln\mathrm{E}_t + \beta_2 ln\ \mathrm{EXD}_t + \beta_3 ln\mathrm{FDI}_t + \beta_4 ln\mathrm{DC\_PS}_t + \beta_i ln\mathrm{X}_t + \mathcal{E}_t \quad [3]$$

To determine the sector-level drivers of economic growth in Zambia's mining and non-mining sectors, an altered version of equation 3 was also applied. The sector level analysis specifically looked into how domestic credit to the private sector, foreign direct investment (FDI), and external demand affected the growth of both the mining and non-mining sectors. Charts, tables, and percentages were used to represent the quantitative variables. Situational observation and analysis of the study field are components of the

qualitative approach. It is believed that the combination of all research methods and data is necessary because the results pertaining to each method will be utilized to enhance theoretical or substantive completeness at the end of the study by complementing one another.

Unit root tests are performed to ascertain the time series properties of the variables before estimating the model. The variables must be integrated in the same order in order to use the VECM. Unit root tests of variables can be used to test for stationarity. Stationarity is employed in this. The unrestricted vector autoregressive (VAR) of order ℧ is defined in general as follows:

$$y_t = A_1 y_{t-1} + A_2 y_{t-2} + .. A_\rho y_{t-\rho} + B x_t + \xi_t \quad [4]$$

where t is a vector with d deterministic variables, ξ_t is a vector of error terms, and a vector with k non-stationary I (1) variables. When the aforementioned model is designated as a VECM, it looks like this:

$$\Delta y_t = \Pi y_{t-1} + \sum_{i=1}^{\rho-1} \Gamma_i \, \Delta y_t - i + B x_t + \xi_t \quad [5]$$

Where $\Pi = \sum_{i=1}^{\rho} A_i - I$, $\Gamma_i = -\sum_{j=i+1}^{\rho} A_j$

If the coefficient matrix $\Gamma_i = -\sum_{j=i+1}^{\rho} A_j$,which gives the number of independent cointegrating vectors, has a reduced rank $r < k$, then there exists $k \times r$ matrices of $a \times \beta$ each with rank r such that $\Pi = \alpha\beta'$ and $x\beta' y_t$ is I(0), r is the number of cointegrating vectors (the cointegrating rank) and each column of β is the cointegrating vector. α is a matrix of adjustment speed, which provides the error correction term's response. This study drew upon existing research and data sets on foreign direct investments (FDIs) in Zambia. By the end of the study, this paper seeks to add to the existing ideas in Zambia about the topic.

Annual time series data covering the years 1970–2019 were used in the study. Real GDP, mining and non-mining foreign direct investment (FDI), domestic credit to the private sector, sectoral GDP, employment, and copper reserves data were compiled or acquired from the World Bank World Development Indicators Data Base, Zambia Statistics Agency, Bank of Zambia, Pen World Tables, UN Statistics, and other sources.

4. Empirical Results and Discussion

Table 4 displays the results of the unit root test. Using the two test procedures, all the variables were stationary in the first difference. Given that the variables are integrated of order one, a cointegration test was performed to identify one cointegrating vector following the determination of the optimal lag length. The short-run and long-run effects were then separated using the VECM technique. First, the role of external demand, foreign direct investment, and domestic credit to the private sector are highlighted in this presentation and discussion of the empirical results of the drivers of overall real economic growth. Second, the forces behind growth in the mining and non-mining sectors are separated, with particular attention paid to the roles played by foreign demand, foreign direct investment, and domestic credit. The paper will further analyze FDI trends in relation to economic growth in this section. The analysis primarily covers the years 1990–2013, when the liberalization of capital flows led to an increase in FDI flows. The remaining two research questions—how much FDI has impacted growth and whether FDI concentration in the mining sector can spur dynamic growth—will be attempted to be addressed. Commodity dependence and export diversification are covered in the latter section. An overview of the conducted interviews will come at the end. The annual percentage growth rate of GDP (as a stand-in for economic growth) at market prices determined by the constant local currency is the set of data used in this study. The total net inflows of foreign direct investment (FDI) from 1970 to 2011, expressed as a percentage of GDP. Data on GDPGR and FDI are taken from the "World Development Indicators" published by the World Bank. The World Bank's annual exchange rates are used to convert domestic currencies into U.S.

dollars, which serve as the basis for the aggregates.

The results for the drivers of the total real GDP as estimated by a VECM are shown in Table 4.1. The findings indicate that three key factors that influence Zambia's economic growth are foreign direct investment, domestic lending to the private sector, and external demand. There is a statistically significant negative estimate for the error correction term. According to VECM I, it indicates that the annual rate of adjustment of overall growth to long-run equilibrium is 0.363. Within a year, 36.3% of the growth deviation from long-run equilibrium is corrected, holding all other variables constant. After a shock, growth takes approximately three years to return to long-run equilibrium.

Table 4. ADF Unit Root test at levels

Variable	ADF_Test Statistic	1%-Critical Value	5%-Critical Value	10%-Critical Value	p-value	Decision
FDI	1.111	-4.0348	-3.2626	-2.8776	1.09384	Fail to Reject
GDPGR	-0.8041	-4.0348	-3.2626	-2.8776	0.92257	Fail to Reject

If the time series are determined to be non-stationary, a common method is to use the first differences of the variables to make them stationary. I thus consider the initial discrepancies between GDPGR and FDI. In Table 4.1, the alternative hypotheses without a trend option and the null hypothesis are configured so that neither of the variables has a unit root and both variables have a unit root, respectively. The null hypothesis that there is a unit root for both series is rejected since the ADF test statistic is less than 5% of the critical value.

Since there is no evidence of a relationship between FDI and GDPGR in developing countries, the government of Zambia should give serious consideration to alternative sources of capital inflow that could boost the country's GDPGR. Chinese and other foreign investments are essentially resource and partially market seekers. They have the ability to eventually drain Zambia's economy of its meager resources. There is proof that FDI is risky for developing economies like Zambia and has the potential to damage the economy from the recent literatures mentioned above. As such, it ought to be shunned whenever possible. It also makes up more than 80% of exports. This has been harmful since the terms of trade have definitely been influenced by copper prices. Findings indicate that terms of trade shift in Zambia's favor during spikes in copper prices. However, the terms of trade worsen against Zambia during periods of plunging prices. However, it is risky in and of itself that the majority of the nation's economic activity has been concentrated in one industry, pushing the economy into the role of price taker. Ironically, the majority of FDI flows have gone to this very sector. The investigation also looked at potential policy influences on the FDI flow pattern. The findings indicate that the incentives provided in the manufacturing sector were likewise appealing, albeit not quite on par with those in the mining sector. As a result, the variables are integrated in order one, I (1), and have become stationary.

Table 4.1: First-difference ADF Unit Root tests

Variable	ADF_Test Statistic	1%-Critical Value	5%-Critical Value	10%-Critical Value	p-value	Decision
FDI	-4.6662	-4.0425	-3.2659	-2.8787	0.00066	Reject
GDP	-4.4473	-4.0425	-3.2659	-2.8787	0.00132	Reject

Tari (2005) asserted that the variables at levels did not result in a spurious regression and contended that two or more time-series data might be co-integrated if they were integrated in the same order. Because FDI and GDPGR are both time-series that are I, co-integration techniques are therefore applied to them. Reviewing policies that encourage foreign direct investment (FDI) in non-traditional sectors, particularly manufacturing, is crucial because it has been demonstrated that the economy's excessive reliance on primary export commodities has left it susceptible to declining prices and other distortions in the global economy. The ZDA Act of 2006, which is presently undergoing revision, has established incentives to encourage investment in industries other than mining. FDI toward manufacturing has increased somewhat, particularly since 2010, despite the fact that these subsectors are consumer- or mining-oriented. Imports of manufactured goods are rising almost proportionately to the prevailing phenomenon of primary export production and exportation. Furthermore, it is correlated with the underutilization of regional capacity to expand the manufacturing sector beyond local market production. Dickey et al. (1991) state that co-integration suggests that even though the time-series variables are non-stationary individually, one or more linear combinations of the variables are stationary. According to Granger and Newbold (1974), when choosing a method to test the existence of a relationship between two non-stationary variables, one must consider the possibility of co-integration. I should first use criteria like AIC, BIC, and SIC to determine the ideal lag length before proceeding to the co-integration test. To figure it out, I then look at the output in Table 4.2 that follows. The stars do, in fact, indicate that three is the proper lag length. Please take note that the stars are at specific values because information criteria must be minimized.

Table 4.2 Lag length selection table

Lag	LL	LR	df	p	FPE	AIC	HQC	SBIC
0	-217.624	-	-	-	250.2038	12.21297	12.24674	12.30977
1	-208.164	13.4255	4.4	0.0022	193.8981	11.9317	12.03301	12.22199
2	-189.497	37.3395	4.4	0	94.58383	11.13893	11.30778	11.62282
3	-180.015	17.242*	40.002	66.9452*	9.8696*	10.084*	10.484*	11.20317
4	176.385	7.26396	4.4	0.1738	77.44704	10.89913	11.20317	11.77011

The Johansen ML co-integration test, which was first presented by Johansen (1988; 1991), is used to determine whether FDI and GDPGR are co-integrated after the appropriate lag length has been chosen. This test uses the following vector auto-regression (VAR) model (2) to demonstrate the relationship

between the variables:

$\Delta lnY_t = \sum_{i-1}^{k} \Gamma_i \, \Delta lnY_t$ - I + Π lnY_{t-i} + $\mathcal{E}_t$

where FDI and GDPGR, the n*1 vector of I (1) variables, are represented by *Yt*. The n*n matrix of coefficients to be tested is represented by the parameters Ÿ and Π.

Given that mining and manufacturing incentives coexist, a crucial policy recommendation would be to either reduce mining sector incentives or raise manufacturing sector incentives in order to boost investment flows in the latter. All I have to know is that there won't be a co-integrating relationship if the rank is zero. There will be one co-integrating relation if the rank (r) is one, two if it is two, and so forth. Two time series that co-integrate have a long-term relationship and are unable to diverge significantly from one another. The maximum likelihood estimation and two statistics—the maximum eigenvalue (K max) and the atrace-statistics (λ trace)—form the basis of this test. where the general alternative hypothesis of r>0 is tested against the null hypothesis of r equal to zero (no co-integration) using the λ trace statistic. In contrast to the alternative of r+1 co-integrating vectors, the null hypothesis that the number of co-integrating vectors is r is tested by the K max statistic.

Table 4.3's result shows that, for a rank of zero at the 5% level of significance, the null hypothesis of no co-integration is rejected because the trace statistic is greater than the critical value of 5%. The trace statistic is less than the 5% critical value, so the null hypothesis of "1 co-integrating equation" versus "2 co-integrating equations" cannot be rejected at the 5% level of significance in the following step. I ultimately come to the conclusion that VECM can be identified using only one co-integrating equation.

Table 4.3: Johansen ML Co-integration test result

Maximum Rank	parms	LL	eigenvalue	trace statistic	5% critical value
0	11	-205.304	0	18.62201	16.951
1	15	-196.009	0.387145	0.0116*	4.136
2	17	-195.998	0.00033	-	-

VAR analysis cannot be used if two variables are co-integrated by a common factor (co-integrating vector). I have to take this relationship into consideration and use VECM, which corrects short-term variations in variables and departures from equilibrium. If VECM is the right technique to use, I have to make sure that the estimated parameter of "equation one" in VECM will be negative and statistically significant. The presence of the negative sign ensures that the long-term relationship is made possible by short-term deviations.

Table 4.4: VECM's outcome

Co-integrating equations							
Equation		Parms		chi2		P>chi2	
_ce1		1		12.92023		0.0003	
Johansen normalization restriction imposed							
_ce1	beta	Coef.	Std. Err.	z	P>|z|	[95%Conf. Interval]	
	GDPGR	2	.	.	.	.	.

	FDI	-0.90244	0.226589	-3.949	0	-1.25851	-0.37037
	_cons	0.36971	.	.	.	.	.

According to Table 4.4, "equation one's" coefficient is -0.82, and at the 5% level, it is statistically significant. Additionally, the error correction mechanism functions, and any brief variations in the GDPGR and FDI time series result in a stable long-term relationship because the coefficient's value falls between zero and minus one. Ghatak (1998) states that 82% of disequilibrium is "corrected" annually. According to Granger (1988), there must be at least one Granger-causality between the variables if two series are co-integrated. I examine the direction of the relationship between FDI and GDPGR in the following section. According to Granger (1988), the Granger causality test is a statistical hypothesis test that assesses the usefulness of one time series in forecasting another. Only if the variables are co-integrated and stationary or non-stationary will it be significant. The following are the equations: **lnGDPGRt = α1 + β1lnGDPGRt-1+β2lnGDPGRt-2 +…+δ1lnFDIt-1 + δ1lnFDIt-2 +… + ε1t lnFDIt = α2 + +γ1lnFDIt-1 + γ2lnFDIt-2 +… λ1 + λ2 lnGDPGRt-2 +... + ε2t**

where β, δ, γ, and λ are the parameters that indicate how well the historical values of the variables explain the current value of either series, and ε1t and ε2t are white noise error terms. The general null hypothesis is that variable X does.

Granger did not cause variable Y. Two null hypotheses are put forth in this study: GDPG does not Granger cause FDI, and FDI does not Granger cause GDPG. Note that the null hypothesis of no Granger causality can only be rejected if and when an explanatory variable's lagged value is eliminated from the regression (3) and/or the regression in four dimensions.

Table 4.5: The Granger Causality test result

Granger causality Wald tests				
Equation	Excluded	chi2	df	Prob>chi2
FDI	GDPGR	1.29019	1.1	0.3069
FDI	ALL	1.29019	1.1	0.3069
GDPGR	FDI	13.09	1.1	0.0011
GDPGR	ALL	13.09	1.1	0.0011

Table 4.5's outcome shows that, while I fail to reject the null hypothesis in the case that GDPGR does not Granger cause FDI at the 5% level, I do reject the null hypothesis in the case that FDI does not Granger cause GDPGR. As a result, it seems that FDI and GDPGR are causally related in a single direction.

5. Conclusion

This study examined the factors that drove Zambia's economic growth between 1970 and 2019 using the vor error correction model: domestic credit to the private sector, foreign direct investment, and external demand. It also made a distinction between how the mining and non-mining sectors grow in relation to these and other factors. The findings indicate that Zambia's growth is primarily driven by external demand, foreign direct investment, and domestic loans to the private sector. External demand and foreign direct investment (FDI) have a significantly greater sector-level influence on growth in the non-mining than in the mining sector. Based on the results, it can be said that Zambia lacks the necessary conditions for foreign

direct investment (FDI) to improve its economic status, since FDI is more likely to benefit wealthy and stable economies. The main takeaway for Zambia and other developing nations from the research presented here is that there are advantages to foreign direct investment. These advantages do not, however, accrue regularly and uniformly across national boundaries. Actually, this is dependent upon the nation of recipient. In order to maximize the benefits of foreign direct investment (FDI) from foreign companies, there must be an unrestricted, empowering business environment that attracts both domestic and foreign investment, provides incentives for innovation and skill development, and enhances modest corporate environments. This study made an effort to demonstrate how foreign direct investment (FDI) affects economic growth in an economy that depends on natural resources. Even though there had been instances of FDI flows prior to 1991, the year's economic liberalization led to an increase in FDI flows into Zambia. The mining industry has been the main driver of the economy's structure, with copper serving as the primary export good. While the free flow of capital and consequently foreign direct investment (FDI) was made possible by the adoption of neoliberal policies in 1991, the ZCCM (a state parastatal that represents all the mines) was only partially privatized, starting in 1997 and ending in 2000. Since then, the mining industry has received an average of more than 50% of all FDI flows. This finding implies that Zambia's economy is more outward-focused, which makes maintaining and enhancing economic diversification and external competitiveness even more crucial as policy options to promote growth and protect the economy from outside shocks. To encourage growth, it is essential to encourage foreign investment in non-mining sectors, mobilize complementary domestic investment, and establish an environment that minimizes policy uncertainty for investment. Therefore, if income is a measure of poverty and it has been shown here that the jobs produced by foreign direct investment (FDI) in Zambia and other developing nations are of low quality and pay poorly, it can be concluded that Zambia will not see a decrease in poverty if its citizens continue to rely on FDI. This suggests that FDI is not Zambia's best source of foreign exchange.

References

1. Adewumi, S (2006). The Impact of FDI on Growth in Developing Countries: An African Experience. Jönköping University. Accessed 11 June, 2015< www.diva-portal.se/smash/get/diva2:4440/FULLTEXT01.pdf
2. Anyanwu, J. C. (2014) 'Factors affecting economic growth in Africa: Are there any lessons from China?' African Development Review, 26 (3): 468-493.
3. Bhattarai, K., & Ghatak, S. (2010). FDI, investment and growth in OECD countries. Economics Discussion Paper,2010/5, Kingston.
4. Ho, S. Y., & Iyke, B. N. (2020). The determinants of economic growth in Ghana: new empirical evidence. Global Business Review, 21(3), 626-644.
5. Johansen, S. (1988). Statistical analysis of co-integration vectors. Journal of Economic Dynamics and Control, 12(2–3), 231–254. http://dx.doi.org/10.1016/0165-1889(88)90041-3
6. Johansen, S. (1991). Estimation and hypothesis testing of co-integration vectors in gaussian vector autoregressive models. Econometrica, 59(6), 1551–1580. http://dx.doi.org/10.2307/2938278
7. Johansen, S., (1990) 'Estimation and Hypothesis Testing of Cointegration Vectors in Gaussion Vector Autoregressive Models' Econometrica 159, 1551
8. Nair-Reichert, U. & Weinhold, D. (2001) A New Look at FDI and Economic Growth in Developing Countries
9. Ndulo, M and D. Mudenda and (2010). Trade Policy Reform and Adjustment in Zambia. Accessed 5

October, 2015 < http://www.unctad.info/upload/TAB/docs/TechCooperation/zambia_study.pdf>
10. UNCTAD (2021). Best Practices in Investment for Development. How to Attract and Benefit from FDI in Mining: Lessons from Zambia and Chile. Investment Advisory Series B (7).
11. World Bank (2014). Zambia Overview. Accessed 11 September, 2015< http://www.worldbank.org/en/country/zambia/overview>
12. World Development Indicators (2015). World Bank Data Base. Accessed July 2015< http://data.worldbank.org/data-catalog/world-development-indicators>
13. http://www.resourcegovernance.rg/publications/diversification-resource-dependent-countries>
14. Zambia Mines and Minerals Act (1995). Accessed 16 July, 2015< http://www.azmec.co.zm/downloads/Old%20Files/Mines-and-Minerals-Act-1995.pdf>
15. Zambia Mines and Minerals Act (2008). Accessed 13 July, 2015< http://www.eisourcebook.org/cms/Zambia%20Minerals%20&%20Mining%20Development%20Act%202008.pdf>
16. Zambia Development Agency (2015) <www.zda.org.zm/
17. Zambia Economic Report (1994). Ministry of Finance Annual Report. Accessed 12 October, 2015< http://zambiamf.africadata.org/en/ResourceCente>