An Empirical Analysis of Economic Growth and Unemployment in Zambia from 2011 to 2021

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Abstract

The study attempts to provide an empirical analysis of the relationship between economic growth (in the form of Real GDP) and unemployment rate for Zambia from 2011 to 2021, using time series techniques. The time series techniques used were Augmented Dickey-Fuller unit root test for stationarity, Johansen tests for cointegration to test long run relationship between economic growth and unemployment rate, regression using vector autoregression to test the cointegration properties and Granger tests for causality. Empirical results shows that there is a long run relationship between economic growth and unemployment; economic growth has a negative impact on unemployment, i.e., as economic growth rate increases, the unemployment rate decreases, and vice versa, suggesting that Okun's Law is applicable in the Zambian economy as they prove that growing GDP (economic growth) decreases unemployment.

The study recommended that the government of the Republic of Zambia need to implement strong economic policies that will ensure a strong, stable and growing economy which will in turn reduce the unemployment rates and hence improve the livelihoods of the people.

Keywords: Unemployment rate, economic growth, Okun's Law, unit root tests

Introduction

Zambia, officially the Republic of Zambia, is a landlocked country at the crossroads of Central, Southern and East Africa (Henderson, 1970). It is typically referred to being in South-Central Africa or Southern Africa. It is bordered to the north by the Democratic Republic of the Congo, Tanzania to the north-east, Malawi to the east, Mozambique to the southeast, Zimbabwe and Botswana to the south, Namibia to the southwest, and Angola to the west. The capital city of Zambia is Lusaka, located in the south-central part of Zambia.

It has a total area of 752,617 km square and a high population of 20,216,029 as of 2023, and suffers a range of socioeconomic challenges including unemployment, large budget deficit, inflation, huge public debt and high poverty rates.

In economics, it is a wide view that the Gross Domestic Product (GDP) growth rate, herein depicting economic growth, tends to raise employment and decrease unemployment. This theoretical postulation which associates output and unemployment has become known as "Okun's Law". This association is among the well-known theories in macroeconomics and has been established to be true for many regions and countries especially in industrialized countries (Lee, 2000; Farsio and Quade, 2003; Christopoulos, 2004; Daniels and Ejara, 2009).

It is noted however, that there are not many attempts to study this association in poor countries. This study has the motivation of testing Okun's Law's validity for Zambia.

Among many challenging issues that the Zambia policy makers must deal with, the issue of unemployment with the associated socioeconomic implications, remains top on the list and usually a cause of unrest among the citizenries.

"Unemployment is a labour market situation in which individuals who are not in employment are actively seeking work/business opportunities and make themselves available for work during a specified short reference period. Unemployment rate is expressed as a percentage of unemployed population to the total labour force" (Zambia Statistics Agency, Labour force Survey Report, 2021).

In Zambia, the unemployment rate has been fluctuating between periods of high rates to modest rates. For example, the unemployment rate in 2005 was 16.0 percent compared to 7.8 percent in 2012. During the period of review of this study, the unemployment rate trend has been rising reaching 12.5 percent in 2021.

"Economic growth (GR) is the yearly percentage of the GDP growth that is the summation of private consumption expenditures, investment or business expenditures, government expenditure on goods and services, and the nation's net export" (World Bank).

During the 2006 to 2010 period, the annual real Gross Domestic Product (GDP) growth rate averaged 8.7 percent, with the highest annual growth rate recorded at 10.3 percent in 2010. Increased mining sector investments, transport and construction were the main drivers of growth during this period.

However, between 2011 and 2016 there was slowed economic growth averaging 4.9 percent. The construction sector, Information and Technology, as well as wholesale and retail trade were the main drivers of growth during this period.

The period 2017-2021 registered a further growth decline averaging 1.4 percent which was hugely caused by bad weather conditions hampering energy and agricultural sectors. Notable also was contracted economic growth in 2020 by 2.8 percent, recording the first recession since 1998. This was as a result of the global impacts of the pandemic COVID-19 that led to disruptions in containment measures and supply chains.

In 2021, there was a recovery in the real GDP growth to 3.6 percent, driven by wholesale and retail trade, energy, agriculture, and the ICT sectors.

Table 1.1 shows the average unemployment and economic growth rates from 2011 to 2021 in Zambia.

Table 1: Unemployment rate and economic growth in Zambia (2011-2021)

Year	Real GDP Growth (%)	Unemployment Rate (%)
2011	5.57	10.55
2012	7.6	7.8
2013	5.06	8.61
2014	4.7	7.4
2015	2.92	10.13
2016	3.78	10.87
2017	3.5	12.6
2018	4.04	11.4
2019	1.44	12.5
2020	-2.79	13.8
2021	4.6	12.5
Average	**3.67**	**10.74**

Source: Ministry of Finance and National Planning and Zambia Statistics Agency, Labour force Survey Reports 2021

Unemployment has a predominant feature of high persistence, seen even in times of relative boom. The figures above depict the depth of the problem of unemployment in Zambia. Hence, investigating the relationship of unemployment to economic growth will enable analysts/policy makers to come up with specific policies to aid in unemployment reduction in the country.

Despite the socioeconomic implications associated with high rates of unemployment, other issues still need to be resolved. These include, what factors account for unemployment existence? Does the unemployment size follow an independent path different from other variables in macroeconomics?

The empirical analysis of the association between economic growth and unemployment aims to answer these questions. Seeing that both variables, i.e., economic growth and unemployment rate are to some extent affected by the economic cycle, we would anticipate an ultimate relationship between them to exist. In this connection, high economic growth rates will lead to reduced unemployment and vice versa. This study will give an empirical analysis of the disputable relationship between Gross Domestic Product and unemployment for Zambia.

Review of Literature

Improving the living standards of people, employment reduction and raising economic growth have become cardinal issues that economists and policy makers are concentrating on all over the world. Several studies have been carried out in various countries to aid in growing the economy, which in turn would reduce unemployment and better the living standards of the citizens.

Walterskirchen (1999) probed the association linking economic growth, employment, and unemployment in Europe. This study investigated the link between the labour market and economic growth. He got the results using two methods: international cross-country analysis for all European Union countries and time series analysis for the individual European Union countries between 1988 and 1999.

The findings of the study showed a strong positive association between Gross Domestic Product growth and employment level changes. Walterskirchen (1999) did however point out that the findings were in line with certain empirical studies that argued that a rise in employment will only be seen if the rate of economic growth surpass the gains in productivity.

The findings of the study also showed a negative relationship between employment and unemployment changes, though not at a ratio of 1:1. The study also revealed a strong negative association between economic growth and unemployment rate changes in both the cross-country and time series analyses.

Zagler (2006) examined the relationship economic growth and unemployment in in the United Kingdom between 1982 and 1999. Structural change was pivotal in the creation and destruction of jobs in an economy. The methods used was fixed effects panel regression and the results revealed a strong and negative relationship between economic growth and unemployment. Fast growing economies would for a shorter period encounter structural unemployment. Proper planning and human capital improvements could minimize unemployment.

Hussain, Siddiqi, and Iqbal (2010) investigated the link between unemployment and economic growth in Pakistan by use of the Vector Auto Regression method using time series data for the period between 1972 and 2006. The Augmented Dickey Fuller (ADF) was employed to test for stationarity. The findings of the study showed a negative relationship between unemployment and economic growth in Pakistan,

suggesting that labour intensive policies could reduce unemployment.

Yerdelen Tatoglu (2011) investigated how economic growth is affected by unemployment in European countries in the short and long run. The study investigated how the hysteresis hypothesis and the natural rate hypothesis (NAIRU) are applicable to unemployment changes in the nineteen countries studied. The results showed a variation between countries of Okun's Law's validity and the significance of the association between unemployment and economic growth rates.

Khrais and ve Al-Wadi (2016) investigated the link between unemployment and economic growth in Middle East and North Africa countries between 1990 and 2016 employing simple linear regression and found that there was a weak link between economic growth and unemployment.

Alawin (2013), attempted to show the association between unemployment rate and trade balance in Jordan over the period 2000 to 2012 employing the ADF test and Johansen's co-integration and established that trade balance decline increases unemployment rate which can cause a negative effect, in the short run, on the trade balance.

Rationale of the study

Economic growth and unemployment remain among the key macroeconomic variables affecting the economy of any country. Attaining stable and high economic growth rates and decreasing unemployment rates are critical issues that all economies face, especially poor countries. High unemployment rates lead to various socioeconomic and political consequences, which usually result from declining economic growth rates and increasing population growth.

Many economic studies have investigated the association between economic growth rates and unemployment rates by verifying Okun's Law's applicability (Arther M. Okun, 1962), which proposes a negative relationship between unemployment rate changes and economic growth rates.

Despite many studies addressing Okun's Law in analysing the association between economic growth and unemployment being available, most of these studies have concentrated on developed economies. Unfortunately, there are few studies that have been conducted in poor countries, including Zambia.

It is for this reason that this study was undertaken to verify if Okun's Law is applicable in the Zambian economy. It aspires to explore the nature and form of the association between unemployment and economic growth. Attaining stable and high rates of economic growth as well as unemployment reduction remains challenges that the Zambian economy has been facing in the past ten years.

Therefore, the results from this study are hoped to help to recognize or identify the kind of unemployment prevalent in the Zambian economy, which in turn will guide the drawing up of relevant policies aimed at decreasing unemployment rates and promoting future economic growth in Zambia.

Statement of the Problem

The Zambian economy has experienced a number of fluctuations in the history of the country, with unemployment rates also fluctuating. In 2006, the Zambian Government launched the Vision 2030, a long-term plan, envisioning Zambia to become "A Prosperous Middle-Income Nation by 2030". The Vision outlines the desirable long-term paths of the socio-economic indicators to satisfy the people's aspirations and articulates possible long-term alternative development policy scenarios at different points through the target year 2030 (Zambia Vision 2030, 2006).

During the 2006 to 2010 period, the annual real Gross Domestic Product (GDP) growth rate averaged 8.7 percent, with the highest annual growth rate recorded at 10.3 percent in 2010. However, between

2011 and 2016 there was slowed economic growth averaging 4.9 percent. The period 2017-2021 registered a further growth decline averaging 1.4 percent, notable was the contracted economic growth in 2020 by 2.8 percent, recording the first recession since 1998. This was as a result of the global impacts of the pandemic COVID-19 that led to disruptions in containment measures and supply chains.

The unemployment rate has been fluctuating between periods of high rates to modest rates. For example, the unemployment rate in 2005 was 16.0 percent compared to 7.8 percent in 2012. During the period of review of this study, the unemployment rate trend has been rising reaching 12.5 percent in 2021.

In view of these challenges faced by the Zambian economy and its labour market, this study's problem is described as follows: To what degree does the economic growth rate change impact the rate of unemployment in Zambia during the study period? Does a decrease in economic growth rate results in an increase in unemployment rate in Zambia? What impact does the attained pattern of economic growth have on unemployment in the Zambian economy? To what degree is Okun's Law applicable and valid to the Zambian economy situation?

Objectives

The study has the following objectives:

1. To review the Economic Growth rate in Zambia from 2011 to 2021
2. To review the Unemployment rate in Zambia from 2011 to 2021
3. To investigate the relationship between Economic growth and Unemployment in Zambia
4. To determine the impact of economic growth rate on unemployment rate in Zambia over the period 2011 to 2021

It seeks to respond to the questions raised in the research problem.

Hypothesis

The assumptions of the study are as follows:

1. An indirect relation exists between the economic growth and unemployment rates.
2. Such relation implies the probable applicability of Okun's Law in the Zambian economy.

The study, therefore, tries to test the attainment of the following assumption: 'Economic growth negatively impacts the unemployment rate in Zambia during the period 2011 to 2021.

Methodology
Study Design

The study used a Quantitative, Descriptive Case Study research design.

Data collection plan and tools

The study obtained data from various sources, i.e., Zambia Statistics Agency, Ministry of Finance and National Planning, the Bank of Zambia and the World Bank electronic databases.

Annual time series data on real Gross Domestic Product growth rates and unemployment rates were used for the period 2011 to 2021. Therefore, unemployment and economic growth (GDP), were the two variables being focused on. This period 2011 to 2021 was chosen because it was the time the Patriotic Front were in Government and saw a steady rise in unemployment rate and a contracted economy.

In September 2011, the social democrat, Michael Sata led the Patriotic Front (PF) to victory with a vow to improve conditions for their Zambian employees. Though known to previously oppose Chinese

investment, he declared his change in perspective prior to his election victory. Sata died on 28 October 2014 and was succeeded by Edgar Lungu. The period, saw an infrastructure boom with the development of the Kafue Gorge Lower Power Station, two multi-purpose stadiums, Levy Mwanawasa Stadium and National Heroes Stadium, expansions of the Kenneth Kaunda International Airport, the Harry Mwanga Nkumbula International Airport and the Simon Mwansa Kapwepwe International Airport, and the Pave Zambia 2000 project intended to create and repair major urban roads countrywide.

Unfortunately, this came at a huge debt cost that slowed the economy and compounded by corruption and the COVID-19 pandemic resulted in weak GDP growth and a recession in 2019 and 2020 respectively. Zambia's GDP had shrunk from US$29 billion to US$19 billion, and its debt grew from 16% to 140% of GDP from 2010 through 2020. In November 2020, Zambia became Africa's first coronavirus-era default when it opted to bow out of a US$42.5 million Eurobond repayment.

Data Management and Analysis

The Data was entered into Excel, after which it was exported to STATA 15 for statistical analysis.

To test the relationship between economic growth and unemployment, time series techniques, i.e., Augmented Dickey-Fuller (ADF) for unit root, cointegration test and a simple regression were used.

Model Specification

The standard version of Okun's Law was used in the study, using the knowledge obtained from the literature surveyed, given in the following equation:

$y_t = \beta_o + \beta_1 u + e_t$ ... (1)

Where:

y = The real output product

u = The level of unemployment

e = The white-noise disturbance term

The parameter in (B) in Equation 1 is the Okun coefficient and denotes real output changes brought about by unemployment rate changes. The measure of the link between economic growth and unemployment is provided by the estimated elasticity; where high Okun coefficient estimates favours Okun's Law while low coefficient estimates suggest a weak relationship between unemployment rate and economic growth.

To ensure reliable regression results, our model should not be prone to spurious regression (Gujarati, 1995), hence the time series nature was tested for stationary or non-stationary using the Augmented Dickey-Fuller (ADF) unit root test, followed by regression to the differences and investigation of the cointegration properties for the principal series.

The following equations for cointegrating were employed:

$\ln GDP_t = \alpha_o + \alpha_1 \ln u_t + e_t$ ... (2)

$\ln u_t = \lambda_o + \lambda_1 \ln GDP_t + e_t$ ... (3)

If the log of (GDP) growth rate and (u) rate cointegrated, then the cointegration residuals from equation 2 and 3 must be integrated to order zero, implying stationarity for residuals. To determine if the null hypothesis of no cointegration is rejected, the Johansen Cointegrating test was performed, followed by vector autoregression and finally the Granger Causality test.

Results and Discussion

After converting the Real GDP Growth and Unemployment Rate variables to the natural logarithms, the data set was set to time series and an Augmented Dickey Fuller Unit Root test was performed on both, at level and at first difference to determine if there was stationarity or non-stationarity.

The results are shown in tables 2 to 5 below.

Table 2: ADF Unit Root Test for log Real GDP Growth Rate (At Level)

```
Dickey-Fuller test for unit root                    Number of obs   =        10
```

	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
		—————— Interpolated Dickey-Fuller ——————		
Z(t)	-2.777	-3.750	-3.000	-2.630

```
MacKinnon approximate p-value for Z(t) = 0.0616
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Table 3: ADF Unit Root Test for log Real GDP Growth Rate (At First Difference)

```
Dickey-Fuller test for unit root                    Number of obs   =         9
```

	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
		—————— Interpolated Dickey-Fuller ——————		
Z(t)	-5.041	-3.750	-3.000	-2.630

```
MacKinnon approximate p-value for Z(t) = 0.0000
```

Table 4: ADF Unit Root Test for log Unemployment Rate (At Level)

```
Dickey-Fuller test for unit root                    Number of obs   =        10
```

	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
		—————— Interpolated Dickey-Fuller ——————		
Z(t)	-1.149	-3.750	-3.000	-2.630

```
MacKinnon approximate p-value for Z(t) = 0.6953
```

Table 5: ADF Unit Root Test for log Unemployment Rate (At First Difference)

```
Dickey-Fuller test for unit root                    Number of obs   =         9
```

	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value
		—————— Interpolated Dickey-Fuller ——————		
Z(t)	-5.097	-3.750	-3.000	-2.630

```
MacKinnon approximate p-value for Z(t) = 0.0000
```

From the obtained results, test statistic of -2.777 and -1.149, p- value of 0.0616 and 0.6953 for Real GDP Growth and Unemployment Rate respectively, at level, both p-values are not statistically significant (p-value is greater than 0.05), and hence the two variables are non-stationary. The test statistics are both greater than the critical values. This implies that the time series have statistical properties that are changing through time.

When the variables were further tested with the ADF unit root test at first difference, the obtained results were, test statistic of -5.041and -5.097, p- value of 0.0000 and 0.0000 for Real GDP Growth and Unemployment Rate respectively, both p-values are statistically significant (p-value is less than 0.05), and hence the two variables are stationary at first difference. The test statistics are both less than the critical values. This means that our data is first order integrated.

The two variables were then subjected to Johansen Cointegration tests to establish long-run relationship between them. The results are shown in table 6 below. The null hypothesis states that there is no cointegration, while the alternative hypothesis states that there is cointegration.

Table 6: Cointegration test for log Real GDP Growth and Unemployment Rate

```
                        Johansen tests for cointegration
Trend: constant                                  Number of obs =      8
Sample:  2014 - 2021                                      Lags =      3
```

maximum rank	parms	LL	eigenvalue	trace statistic	5% critical value	1% critical value
0	10	5.3990952		207.6128	15.41	20.04
1	13	105.64089	1.00000	7.1292	3.76	6.65
2	14	109.20548	0.58982			

maximum rank	parms	LL	eigenvalue	max statistic	5% critical value	1% critical value
0	10	5.3990952		200.4836	14.07	18.63
1	13	105.64089	1.00000	7.1292	3.76	6.65
2	14	109.20548	0.58982			

From the obtained results, the trace statistic, 207.6128, is greater than the critical values of 15.41 and 20.04 at 5% and 1% respectively, and the max statistic, 200.4836, is greater than the critical values of 14.07 and 18.63 at 5% and 1% respectively. Hence, we reject the null hypothesis that there is no cointegration between the variables. This implies that Real GDP Growth Rate (economic growth) and Unemployment Rate are cointegrated, i.e., have a long-run relationship.

Since there exists a cointegration relationship between the variables, we proceeded to perform regression using the vector auto regression model. The results are shown in table 7 below.

Table 7: Regression test for log Real GDP Growth and Unemployment Rate

```
Vector autoregression

Sample:  2013 - 2021                    Number of obs    =         9
Log likelihood =   6.859009             AIC              =  .6979979
FPE            =    .0091459            HQIC             =  .2250979
Det(Sigma_ml)  =    .0007466            SBIC             =  .9171363
```

Equation	Parms	RMSE	R-sq	chi2	P>chi2
log_RGDPG	5	1.38432	0.2951	3.767091	0.4384
log_UR	5	.121824	0.8186	40.60145	0.0000

	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
log_RGDPG						
log_RGDPG						
L1.	-.0557808	.4392351	-0.13	0.899	-.9166657	.8051042
L2.	-3.191808	2.899876	-1.10	0.271	-8.875461	2.491845
log_UR						
L1.	-3.425452	2.335096	-1.47	0.142	-8.002156	1.151252
L2.	-2.184612	2.419432	-0.90	0.367	-6.926612	2.557387
_cons	20.89719	11.4193	1.83	0.067	-1.484228	43.27861
log_UR						
log_RGDPG						
L1.	.0959967	.0386537	2.48	0.013	.0202368	.1717566
L2.	-.779161	.2551959	-3.05	0.002	-1.279336	-.2789862
log_UR						
L1.	.3796715	.2054939	1.85	0.065	-.0230892	.7824322
L2.	-.0549634	.2129157	-0.26	0.796	-.4722705	.3623437
_cons	3.007362	1.004925	2.99	0.003	1.037744	4.976979

From the obtained results, there was a statistically significant p value of 0.013 and 0.002 at L1 and L2 respectively of log Real GDP Growth on log Unemployment Rate, while the p values 0.142 and 0.367 at L1 and L2 respectively of log Unemployment Rate on log Real GDP Growth were both greater than 0.05 implying not statistically significant. This means that economic growth has a significant impact on unemployment rate while unemployment rate has no significant impact on economic growth.

At first order (L1), the coefficient 0.0959967 implies a positive impact of Real GDP Growth on Unemployment rate, while at second order (L2) the coefficient -0.779161 implies a negative impact of Real GDP Growth on unemployment rate. Since the p value at L2 (0.002) is stronger than the p value at L1 (0.013), it follows therefore that there is strong negative relationship between economic growth and unemployment rate i.e., as the economic growth rate increases, the unemployment rate reduces and vice versa.

Finally, a Granger Causality test was performed to confirm the causality between the economic growth and unemployment rate. The results are shown in table 8 below.

Table 8: Granger Causality tests on log Real GDP Growth and Unemployment rate

Granger causality Wald tests

Equation	Excluded	chi2	df	Prob > chi2
log_RGDPG	log_UR	3.6834	2	0.159
log_RGDPG	ALL	3.6834	2	0.159
log_UR	log_RGDPG	9.9173	2	0.007
log_UR	ALL	9.9173	2	0.007

From the results obtained, there was a statistically significant p value (0.007) of log Real GDP Growth on log Unemployment rate while the p value (0.159) of log Unemployment rate on log Real GDP Growth was not statistically significant. This implies that economic growth granger cause unemployment, further confirming the results obtained from the regression test as shown above.

It is evident, from the results obtained, that economic growth has an impact on the unemployment rates in Zambia and hence ensuring a stable and stable economy is key to reducing the unemployment levels among the people of Zambia.

In August 2021, the Zambian populace ushered in a new government with Mr Hakainde Hichilema as President a promise for jobs growth. The New Government has been trying to turn the economy around.

In October 2021, to spur economic development, Zambia took measures to promote local development in its ambitious 2022 national budget. The Government announced an unprecedented constituency development fund (CDF) increment from ZMW 1.6 million (U$91,000) to ZMW 25.7 million (U$1.5million) for each constituency taking the total development fund injection into the local communities from ZMW 250 million (U$14.2 million) to ZMW 4 billion (U$228.4 million). After winning a crucial Staff-Level IMF Deal, in early December 2021, Zambia went on to cut fuel subsidies later that month as a key step in seeking U$1.4 billion from the IMF.

In mid-July 2022, the government recruited 30,496 Teachers. At the end of July 2022, 11,276 health workers, being doctors, nurses and ancillary staff such as drivers were recruited by the government.

At the end of July 2022, the Official Creditor Committee co-chaired by China and France, and vice chaired by South Africa agreed to provide the financing assurances under the G20 Common Framework for debt treatment that Zambia had been waiting for to secure final approval from the International Monetary Fund for a US$1.4 billion bailout under the Extended Credit Facility. In early August 2022, at the symposium on the midyear budget and economic performance and the 2023 to 2025 medium term budget plan, Zambia's Minister of Finance and National Planning, Dr. Situmbeko Musokotwane said the IMF board was expected to meet at the end of August 2022 to approve the loan programme

On 31 August 2022, the International Monetary Fund (IMF) board approved a US$1.3 billion extended credit facility to help Zambia restore fiscal stability.

In June 2023, Zambia reached an agreement in principle to restructure US$6.3 billion of debt with bilateral lenders. In October 2023, Zambia agreed a memorandum of understanding (MoU) with its bilateral creditors on restructuring about $6.3 billion of debt. Following the signing of the MoU, the

terms would be implemented through bilateral agreements with each member of the OCC (Official Creditor Committee).

In March 2024, Zambia struck a 76.5 billion kwacha (US$ 3.0 billion) restructuring deal with bondholders. The agreement included important concessions from the Bondholders, while providing the required debt relief to the Government. Under the agreement, Bondholders would forego approximately 21.4 billion kwacha (US$ 840 million) of their claims and provide cash flow relief of approximately 63.8 billion kwacha (US$ 2.5 billion) during the IMF programme period.

Conclusion

Time series techniques were used in the study to investigate the relationship between economic growth and unemployment in Zambia over the period 2011 to 2021.

The time series techniques used were Augmented Dickey-Fuller unit root test for stationarity, Johansen tests for cointegration to test long run relationship between economic growth and unemployment rate, regression using vector autoregression to test the cointegration properties and Granger tests for causality. The presented results of the study revealed that the data series are non-stationary at their levels and stationary at their differences. Cointegration tests showed that there is a long run relationship between economic growth and unemployment. Further, results showed that economic growth has a negative impact on unemployment, i.e., as economic growth rate increases, the unemployment rate decreases, and vice versa.

Therefore, the study's findings suggests that Okun's Law is applicable in the Zambian economy as hypothesized, as they prove that growing GDP (economic growth) decreases unemployment.

The following recommendations are presented based on the findings of the study:

1. The government of the Republic of Zambia need to implement strong economic policies that will ensure a strong, stable and growing economy which will in turn reduce the unemployment rates and hence improve the livelihoods of the people.
2. The government and policymakers should advance policies promoting self-employment and lower the cost of doing business in the country.
3. The unemployed youth should be integrated, more so in the informal economic sector.
4. Enhanced educational system that teaches business and creation of jobs by graduates and school leavers.
5. Develop policies that boosts the informal sector, promoting entrepreneurship.

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