COGENT ECONOMICS & FINANCE
2025, VOL. 13, NO. 1, 2460074
https://doi.org/10.1080/23322039.2025.2460074

GENERAL & APPLIED ECONOMICS | RESEARCH ARTICLE

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COVID-19 and the Okun's law: the case of Ghana[1]

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ABSTRACT

The Covid 19 pandemic was a strong shock that plummeted into the entire interconnected economic activities of the world. As a result of the lockdown associated with the pandemic, the economies of the world were affected through restrictions like lockdown leading to the reduction of economic indicators like Gross Domestic Product (GDP) and increase in Unemployment. This paper set out to look at the relationship between the GDP and unemployment in Ghana in the periods prior and during the covid pandemic. The Autoregressive Distributed Lag (ARDL) model was used on data from 1991 to 2021. The result shows the nonexistence of the Okun's law in Ghana in each of these periods. We conclude by advising policy makers to implement policies that directly generate more jobs like improvement in the agriculture sector through training and financial support to enable increased employment to match the increase in economic growth.

IMPACT STATEMENT

Studies on the impact of GDP growth on unemployment indicate a negative relationship between them. This relation is formulated as the Okun's law in the economic literature. According to Arthur Okun, a percentage increase in real GDP growth above the trend decreases the rate of unemployment by 0.5% using three different models on data from the US economy. This law is important when it comes to the decision making on key macroeconomic policies such as dealing with economic growth, unemployment, and improvement in employment. This study set out to check the existence of the law in Ghana before and after the Covid 19 pandemic. The findings of the study indicate no existence of the law in Ghana due to the mismatch between job creating sectors and the sectors steering economic growth. We advise policy makers to improve sectors like agriculture through training and financial support to enable increased employment to match the increase in economic growth.

ARTICLE HISTORY
Received 9 October 2023
Revised 11 October 2024
Accepted 24 January 2025

KEYWORDS
Autoregressive distributed lag (ARDL); Covid 19; Ghana; Okun's law

SUBJECTS
Economics; Macroeconomics; Labour Economics

JEL CLASSIFICATIONS
J01; E24

Introduction

The global pandemic due to COVID-19 was a strong shock that plummeted into the entire interconnected economic activities of the world. The modern world economy is intertwining through channels of capital transfer and foreign trade. A shock to any economy has spillover effects on other countries, especially their trade partners. As a result of this, countries see a decline in exports, capital, and outflows leading to the reduction of the overall demand and revenue. For the labor market, the impact of a shock is very critical as it causes distortion in the level of employment, unemployment, and output. The intensity of the impact of a shock to the labor market is also dependent on the adjustment process, policy responses, and the nature of the markets for goods and labor (Hur, 2019).

In human history, one of the worst pandemics experienced according to Kaur et al. (2020) is the COVID-19. Because of the lockdown associated with the pandemic, the economies of the world, especially the developed, developing, and low-income countries have seen a massive impact on the

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Supplemental data for this article can be accessed online at https://doi.org/10.1080/23322039.2025.2460074.

performance of their economic activities as well as the labor market. As stated by Su et al. (2022), regardless of the strong and resilient healthcare system in Europe, America, and Southeast Asia, the number of cases and deaths due to COVID-19 from these countries have proven that these countries were the most vulnerable to the pandemic. A more severe impact of the pandemic was estimated by taking into consideration the number of deaths that are unofficially accounted for. The discrepancy between excess mortality and officially reported deaths due the pandemic may result from underdiagnosis as a result of limited testing, reporting difficulties, or increased mortality from other conditions due to pandemic-related behavioural changes or reduced healthcare access (Wang et al., 2022). The pandemic also distracted the world labour market through the loss of both employment and the number of hours worked. The group of workers worst affected are women, the youth, and unprotected workers (ILO-OECD, 2020; ILO, 2021).

Ghana experienced her first imported case of covid on the 12th of March 2020 following a public announcement of the Ghana health services. Due to this, the ministry of Health in Ghana tracked people suspected to have had contact with the infected people in the country and tested for possible reinfection (Ghana Health Service (GHS), 2020). The result from this contact tracing made it necessary to push for a compulsory quarantine for all travellers coming in from countries with cases of covid to reduce the spread. Regardless of this measure put in place, the virus was able to spread in the country. The increase in the number of cases in major cities like Accra and Kumasi led to a partial two-week lockdown and later increased by another week of total lockdown making it a total of three weeks. Though the workers in the formal class and the elites applauded the government for this action, the story was different in the informal sector. The informal sector takes the centre stage of the socioeconomic setup and accounts for about 80 percent of employment among the working force in Ghana though it is the most neglected sector in the country (Akuoko et al., 2021). The sector employs and produces daily. So, the lockdown led to a reduction in both employment and output and an increase in unemployment. After the government of Ghana eased restrictions by the end of April, the country saw a fall in its Gross Domestic Product (GDP) by 1.1 percent in September which was a decline from the previous year (Aduhene & Osei-Assibey, 2021).

Various studies on the impact of GDP growth on unemployment indicate a negative relationship between them. This relation is formulated as Okun's law in the economic literature. According to Arthur Okun, a percentage increase in real GDP growth above the trend decreases the rate of unemployment by 0.5% using three different models on data from the US economy (Okun, 1962). This law is important when it comes to the decision making on key macroeconomic policies such as dealing with economic growth, unemployment, and improvement in employment. After the formulation of this law a lot of studies have been done to prove the existence of the law in different countries see. (S. Knotek & Terry, 2007; Ball et al., 2013).

In the case of Ghana, studies by Karim and Aomar (2016) and Baah-Boateng (2013) did not find the existence of the law in the country before the advent of the Covid 19 pandemic. However, after the Pandemic, the question remains whether this relation still holds or not. This is the gap the current study sets out to fill. The economy of Ghana has seen an unstable growth since the 90s where agriculture was

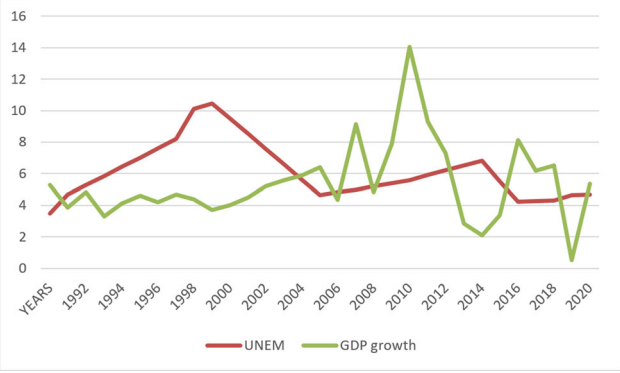

Figure 1. The GDP growth and Unemployment rate in Ghana measured in a percentage.
Source: Authors' compilation with data from world development index.

the main component of GDP growth and source of employment. The story changed after the commencement of commercial oil production in the country in 2009 where the economy saw the highest growth in history as a result of export growth. However, as compared to other developed countries like the USA where the Okun's law holds (S. Knotek & Terry, 2007), Ghana's economic growth does not lead to job creation. This is as a result of the nature of the informal sector which is still dominated by agriculture though it does not lead growth in GDP (Aryeetey & Baah-Boateng, 2015).

Figure 1 below shows the relationship between the Gross Domestic Product growth rate and the unemployment rate (UNEM) in Ghana for the period 1991 to 2021. The figure does not show a stable relationship between these two indicators. For instance, within the periods 2006 and 2012 GDP growth saw fluctuations while the unemployment rate was steadily increasing within these periods. Furthermore, in the period of the pandemic, GDP growth rate declined sharply while unemployment was stable. There are also instances where the unemployment rate equals GDP growth like the years 2004, 2006, 2008 and the 2021.

The main aim of this paper is to check the Okun coefficient of Ghana and how this coefficient was affected in the period of covid19 pandemic. Per the knowledge of the authors as at the time of this research, there has not been research in line of looking at the existence of Okun's law in Ghana after the pandemic. This study turns to fill the gap by looking at the following hypothesis.

Null hypothesis1: The economic growth and unemployment in Ghana does not follow the Okun's law.

Alternative hypothesis1: The economic growth and unemployment in Ghana follow the Okun's law.

Null hypothesis 2: The Okun's coefficient is not very different in both pre and post Covid 19 periods.

Alternative hypothesis 2: The Okun's coefficient is different in pre and post Covid 19 periods.

Literature review

Following the formulation of the Okun's law, there has been a lot of studies about the relation between unemployment and economic growth in different countries. Some study this relation of aftershocks to the countries by comparing the state of the relation before and after the shock. Okun's law has been confirmed in most countries (Okun, 1962; S. Knotek & Terry, 2007; Ball et al., 2013 etc). A study by Weber (1995) checked the cyclical output on cyclical employment in the USA before and after World War II and found a negative relationship between them with a coefficient of -0.36. Gil-Alana (2010) also conducted a test in the UK, USA, and Japan for an empirical application of a bivariate system on unemployment and GDP. The impulse response functions showed that a positive result in output growth has a significant negative impact on unemployment in the short run for the cases of the UK and USA while the effect disappears in the long run. Japan on the other hand had a positive relationship in both the short and long run which was not significant. Altunöz (2019) applied it for the Eurozone regions and found a negative relationship between unemployment and GDP though the cointegration coefficient is lower as compared to that of the US and other developed countries. The coefficient of male unemployment in absolute terms is higher and more sensitive to the business cycle than female unemployment. This is because males are employed in sectors like construction, electronics, and engineering which are very sensitive (Brincikova & Darmo, 2015; Hutengs & Stadtmann, 2014). Moreover, Salman and Shukur (2014) found that GDP granger causes both total unemployment and male unemployment, but the reverse is not the case in Finland. However, female unemployment has no relationship with GDP. Mansoor et al. (2018) also modeled the relationship between unemployment and GDP in Pakistan and found a negative relationship. According to their results, a percentage point decrease in unemployment is triggered by a 0.36% increase in GDP. These findings help policymakers in implementing policies that boost economic growth which in turn decreases the unemployment rate in the economy. The findings of Al-Hosban and Edienat (2017) confirmed the inverse relationship between unemployment and GDP in Jordan for the 1982-2016 period.

However, the Okun coefficient is not the same for these countries due to differences in the economic nature of each country, the methodology used and the inclusion of instruments. Also, some studies such as (S. Knotek & Terry, 2007; Gordon, 2010) argue that the coefficient has decreased after the great

recession in the US while studies like (Cuaresma, 2003; Meyer, 2012; Silvapulle et al., 2004) found a stronger coefficient in the period of crises. The relationship was found to be greatly broken during the global crisis of 2008/2009 (IMF, 2009). This was attributed to the nature, market size and other policies which are different in most countries and are incomparable. Labor market policies as well as the mismatch between jobs and the skill of labor is also a factor for the breaking of the law (Ball et al., 2013). On the other hand, (Ball et al., 2013; Owyang & Sekhposyan, 2012) found a stable coefficient over a period and in business cycles.

On the contrary, the Okun's law is not applicable in some countries as they have different settings from the US. Săvulea (2008) investigated how unemployment and GDP are interdependent in the Romanian economy. The results of this study suggest that the inverse relationship is not applicable in Romanian in the pre- accession period to the European Union. This is associated with the impact of other factors affecting unemployment aside from GDP in the region. Furthermore, it is crucial to assess how the GDP affects unemployment in the long run. Hatti and Larsen (2004) found a variation between unemployment and economic growth in some countries after checking the long-run impact of some macroeconomic indicators on employment from 10 countries from 1913 to 2016. They attributed these differences to institutional diversity and labor market policies. Aktar and Ozturk (2009) also did not find any long-run relation between unemployment and economic growth in Turkey from the period of 2001 to 2007. Lal et al. (2012) did not also find any evidence of the Okun's law in some Asian developing countries.

In the case of Ghana, Karim and Aomar (2016) studied the Okun's law in some selected African countries including Ghana and concluded that in most countries the law does not hold. Countries that show a negative relation between unemployment and growth have very weak coefficients. This is because of the differences in demographic factors, the law of the country and the economic nature of the country among others. Baah-Boateng (2013) checked the determinants of unemployment in Ghana. He found a weak relationship between employment with the growth performance of the country due to the low job creation of the country. He also found a significant relation between education, gender, and location of the person whether in the urban or rural area with unemployment. Again, another study by the same author in 2015 with the aim of looking at the causes of unemployment in Ghana by using a household survey of 2008 and 2013. He found a positive relation between unemployment and education and a negative relation with an increase in age. He found that due to mismatch between skills and job search there is a weak relation between employment and economic growth. Also, Lewis (2019) analyzed the effect of GDP and inflation on unemployment in Ghana for the year 1991 to 2017. They found only long run relationships among the variables with no short run relationship. Saani et al. (2023) found that economic growth induced by official documentation of remittances can lead to a decline in unemployment in Ghana when the remittances are deposited in the banks and are given out as loans to sectors that promote employment.

There have not been a lot of studies about how the covid 19 pandemic has impacted on the Okun's law. In the period of covid-19, Sirah and Atilaw (2020) did not find any relation between economic growth and unemployment in Ethiopia after the covid period which is in line with Karim and Aomar (2016) before the pandemic. Segbenya et al. (2021) found that during the period of the pandemic, the workplace became risky for the new graduates who were supposed to undergo their yearly training as a compulsory national service in Ghana. This increased their probability of becoming unemployed and thereby reducing their level of output for the economy.

From the literature review above it is comprehensible that there have been a lot of studies about the relation between unemployment and economic growth in different countries. Some confirm the law while others do not. In Ghana the relationship between economic growth and unemployment has not been checked after the pandemic and that is the gap the study set out to fill.

Methodology

Data and source

The study uses data from the World Development Indicators (WDI) from the period 1991 to 2021. Gross Domestic Product (GDP) growth is used to represent economic growth. The unemployment rate is used

Table 1. Data.

Variable Name	Variable definition	Frequency	source	Period
Gross Domestic Product growth (GDPg)	Sum of gross value added by all resident producers in the economy at constant local currency.	Annually	WDI	1991–2021
Unemployment rate (UR)	The portion of the labor force that does not work but available for employment.	Annually	WDI	1991–2021
Government expenditure (GE)	All government current expenditures for purchases of goods and services.	Annually	WDI	1991–2021
Inflation rate (IR)	Average annual cost of consumer inquiries in acquiring a basket of goods and services.	Annually	WDI	1991–2021

to represent unemployment. Following (Barnichon & Mesters, 2021; Ramesh, 2009; Ramey & Zubairy, 2018; Ziegenbein, 2021) the control variables for the Okun's law model are government expenditure and inflation. The Philip curve shows a negative relationship between unemployment and inflation which is often used as an indication for economic growth. while fiscal policy shows how government spending is used to stimulate economic growth especially during economic downturn. As a result, we used government expenditure and inflation as our controlled variables since they impact GDP growth. A detailed list of the variables, their definition, frequency, source, and the period used in the study are presented in Table 1 below.

The main objective of this study is to assess the impact of unemployment on economic growth in Ghana before and after the COVID-19 pandemic. A dummy was generated to represent the Covid-19 pandemic. It has ones from the year 2020 to 2021 and zeros in the rest of the years. An interaction term was made with the dummy and the lag of GDP to capture the impact of the pandemic which is treated as an exogenous factor.

Econometric model

We used the Autoregressive Distributed Lag (ARDL) model (Pesaran et al., 2001) in this study. The model is used on time series data to check both long run and short run relationship between the variables simultaneously and it contains the lagged values of the dependent variable, both lag and current values of the independent variables. The addition of the lag dependent variable also controls for all other factors that affect the dependent variable (GDPg) but are not included in the study. Unlike other cointegration models like the Engel and Granger cointegration (Engle & Granger, 1987), ARDL model can be used with fewer sample sizes and on variables with I (0) and I (1) level of stationarity. However, the findings of the model become unreliable when the series are stationary at the second difference I (2) (Pesaran et al., 1997). The general model for the study is stipulated below.

$$gdpg_t = \beta_0 + \beta_1 gdpg_{t-1} + \beta_2 ur_t + \beta_3 ge_t + \beta 4 ir_t + \mu_t \quad (1)$$

Where gdp_t is the dependent variable used as a proxy for economic growth, gdp_{t-1} is the lag of GDPg serving as a control for other components of GDP growth. ur_t is the unemployment rate. While ge_t and ir_t are government expenditure and inflation rate respectively and they serve as controlled variables as stipulated by the literature. To account for the impact of the COVID-19 pandemic, we added the dummy ($covid_t$) representing COVID-19 and its interaction with the lag of GDP growth ($dgdpg_t$) to our general equation.

$$gdpg_t = \beta_0 + \beta_1 gdpg_{t-1} + \beta_2 ur_t + \beta_3 ge_t + \beta_4 ir_t + \beta_5 covid_t + \beta_5 dgdpg_t + \mu_t \quad (2)$$

Results and discussion

Descriptive statistics

Table 2 below shows the descriptive statistics of the variables in this study. From the table, we have 31 observations with all the variables not normally distributed except government spending. Inflation rate has the highest mean value of 22.8 while GDP has the lowest at 5.37. Lastly inflation is more diverse around it meanwhile government expenditure has the least diversion with a standard deviation of 15.25 and 2.38 respectively.

Table 2. Descriptive statistics.

	GDPg	GE	UR	IR
Mean	5.37	10.13	7.47	22.80
Median	4.84	9.87	5.91	17.05
Maximum	14.05	15.31	25.07	80.75
Minimum	0.51	6.96	3.49	8.48
Std. Dev.	2.51	2.38	4.99	15.25
Skewness	1.32	0.43	2.88	2.14
Kurtosis	6.06	2.17	10.58	8.09
Jarque-Bera	21.01	1.87	117.02	57.21
Probability	0.00	0.39	0.00	0.00
Sum	166.57	314.02	231.47	706.73
Sum Sq. Dev.	189.07	170.47	748.21	6978.35
Observations	31	31	31	31

Table 3. Stationarity test.

	Level			First Difference			
variable	ADF	PP	KPSS	ADF	PP	KPSS	Decision
Only Intercept							
GDPg	−3.56**	−3.55**	0.23				I (0)
UR	−0.77	−1.01	0.24	−5.22***	−5.22***		mixed
GE	−2.72*	−2.72*	0.58				I (0)
IR	−4.76***	−4.75***	0.31				I (0)
Trend and Intercept							
GDPg	−3.60**	−3.58**	0.17				I (0)
UR	−0.97	−0.97	0.14	−5.43***	−5.43***		mixed
GE	−4.13**	−4.38**	0.22				I (0)
IR	−5.20***	−5.78***	0.15				I (0)

***, **, * *represent rejection at 1%,5% and 10% significant level respectively.*

Stationarity result

The stationarity of the variables is checked by using three well known tests in order to prevent misleading prediction and spurious regressions. These are the Augmented Dickey–Fuller (ADF)(Dickey & Fuller, 1979), Phillips–Perron (PP) tests (Phillips, 1988) and the Kwiatkowski–Phillips–Schmidt–Shin (KPSS) (Kwiatkowski et al., 1992). The first two have a null hypothesis unit root while the later has a null hypothesis of stationarity. Table 3 below presents the results of the stationarity tests. The unit root tests show GDP to be significant at 5 percent while KPSS shows stationarity at 10 percent in both intercept only and trend and intercept specifications at level. Also, all the tests indicate government spending and inflation rate to be stationary at level in both specifications with different significant levels. However, the unemployment had a mixed result. While ADF and PP found stationarity at the first difference, KPSS shows stationarity at level.

Autoregressive distributed lag estimation results

The ARDL results obtained for the estimation of equation 1 and 2 are presented in Table 4 below. After several iterations of both models, the final model indicating the lag lengths are ARDL (1, 1, 1, 0) and ARDL (1, 1, 0, 0) for equations 1 and 2 respectively.

The relationship between GDPg and unemployment as explained by Okun's law can be seen both before and after the pandemic with lesser and highest coefficients respectively. A percentage increase in the unemployment rate causes a decline in GDPg growth by 0.49 percent before and 0.72 percent after the pandemic which is weaker as compared to other studies. However, the relation is not significant indicating the non-availability of the law in Ghana in both periods. The interaction term is also not significant reenforcing this finding. This result is in the confirmation of most studies done in west Africa and Ghana prior to the pandemic (Aryeetey & Baah-Boateng, 2015; Baah-Boateng, 2013; Karim & Aomar, 2016). The economic growth in most west African countries was found not to promote employment due to the nature of the economy. Most of these countries have natural resources which contribute to export earning leading to growth with fewer people having the technical know-how to work in those sectors.

Table 4. ARDL result.

WITHOUT COVID 19		
	MODEL	(1, 1, 1, 0)
GDPg	Coefficient	Std. Error
GDPg (-1)	0.53***	0.15
GE	5.29**	2.17
GE (-1)	−8.02**	2.86
IR	0.05	0.03
IR (-1)	−0.05*	0.02
UR	−0.49	0.50
C	8.86**	4.51
WITH COVID 19		
	MODEL	(1, 1, 0, 0)
GDPg (-1)	0.52**	0.19
GE	0.51*	0.25
GE (-1)	−0.62*	0.34
UR	−0.72	0.60
IR	0.05	0.04
COVID	−3.08*	1.78
DGDPg (-1)	0.24	0.49
C	2.54	2.42

*Note. ***, ** and * represent rejection at 1%, 5% and 10% significance level.*

The economy of Ghana between the years of 1990 and 2013 grew annually pushing the country to the position of a lower middle-income country in 2007. The highest growth so far was seen in 2010 because of the commercial production and export of oil for the first time in the country's history. During this period the overall growth in export, basically primary products like cocoa, gold with oil dominated the export earnings while sectors like agriculture and manufacturing sectors estimated to have the highest capacity in absorbing labor, saw lower earnings (Baah-Boateng, 2013). The agriculture sector is still the highest capacity for employment but has seen a decline in growth from about 61 percent in the 80s to about 19 percent in 2022 (GSS, 2023). Contrarily, employment in the service sector saw improvement during this period but most of the activities fall in the informal sector. With more than 80 percent of the countries employment in the informal sector coupled with unregulated policy governing their improvement, most of the employees are classified as 'working poor' constituting high rate of vulnerable employment (Baah-Boateng, 2013; GSS, 2023). The state of the economy did not change much during and after the pandemic. The informal sector dominates the economy and provides job to every type of workers (Akuoko et al., 2021).

However, the COVID-19 pandemic negatively impacted the economic growth of the Ghana during the period. From Table 4, the pandemic led to a decrease of 30 percent in GDP growth. This can also be seen in Figure 1 in the introduction.

Additionally, government expenditure in the current year as shown in Table 4 increases economic growth as indicated in economic theory, however previous expenditure decreases growth. This is as a result of debt and investing in unproductive projects (Robson & Obeng, 2008). inflation have the right signs as predicted in the theory though not significant here as is in the studies of Lewis (2019) and Elliot (2015). On the other hand, the GDPg of previous years irrespective of the period strongly increases economic growth of the current period as found in Hole (1994). From the table an increase in the previous year's GDPg increases economic growth rate of the current year by 5 percent whether in the pandemic period or the years before the pandemic.

Finally, to check the robustness of the results, we checked the autocorrelation as well as the heteroskedasticity of the results residuals. The outcomes as presented in the appendix show the residual are not serially correlated and are homoscedastic.

Conclusion

Arthur Okun in 1962 proposed the relationship between economic growth and unemployment to be negative with a coefficient between -0.3 and -0.5 in the USA. This finding triggered a lot of studies in

confirming the law in other countries other than the USA. Some studies confirmed this relation with similar or totally different coefficients while others could not find this relation.

This study set out to check the existence of the Okun's law in Ghana before and after the covid 19 pandemic. The study used data from 1991 to 2021 and was estimated with the Autoregressive Distributed Lag (ARDL) method. The stationarity of the series was confirmed at level by using three tests for stationarity. The result of this study shows a negative relationship between unemployment and economic growth pre and post the pandemic; however, this relation is insignificant. This is as the results of the non-correlation between economic growth and job creation in Ghana unlike the developed countries like the US. The authorities in Ghana have been preoccupied in collapsing or absorbing the informal sector into the formal sector resulting in a weak social safety net for the sector. The sector is mostly made up of the artisans, entrepreneurs, hawkers, and traders providing jobs to all groups of workers and earning income for their daily upkeep.

Unemployment is prevalent among the educated more than the uneducated, the youth more than the old and in the urban cities than the rural cities in Ghana. Most of them migrate from the rural areas to the urban centres in search of work and a better life as a result of limited amenities in the rural area. However, the available job vacancies and amenities in the cities are not enough for the dwellers. As a result, they get trapped in the informal sector. The government should embark on policies that can promote and support entrepreneurship among the youth. Also, education should be such that after graduation, the youth are able to start their own businesses with less or no dependence on the state and other stakeholders for the job.

The informal sector was seen in developing countries as transient and was expected to be defused by formalization. However, it has proven not to be the case through the role it plays in its contribution to GDP and employment. Policies that look into promoting economic growth as means of reducing or eradicating poverty are important albeit the nature of the economy from our study is the main factor to the realization of such policies. With a country like Ghana where the informal sector plays an important role in employment, policies should be formulated in developing the sector. Government spending should be in areas that generate more jobs like improvement in the agriculture sector through training and financial support.

Future studies should work on comparing the existence of the Okun's law in Ghana with other countries in the sub-Saharan region to access the ways to help improve major macroeconomic variables in the region. This will help in the pandemic preparedness of the countries in the region. The current studies used a yearly data in analysing the relationship between unemployment and economic growth in Ghana before and during the Covid-19 period. On the other hand, future studies can replicate this study by looking at other type of unemployment and compare regions as well. This type of focus studies will provide more understanding of the law.

Note

1. The paper was extracted from the thesis of the first author which is archived in http://openaccess.ihu.edu.tr/xmlui/bitstream/handle/20.500.12154/1789/701137.pdf?isAllowed=y&sequence=1. Cite:(Amaama, 2021).

Author contributions

Amaama Abdul Malik: Writing original draft, Conceptualization, interpretation, and Data curation. Dr. Asad ul Islam Khan: Supervision, software, validation, and reviewing.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Data availability statement

All the data used in this study is acquired from the World Development Indicators and it is available to the public domain on their website. I cannot present the data here due to copyright issues however, anyone in need of the data can contact me personally for it.

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