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The Impact of Economic Growth on Unemployment in Ghana: Which Economic Sector Matters Most?

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Abstract:
Unemployment tends to be one of the major challenges bedevilling the Ghanaian economy. Therefore, in the attempt to combat unemployment, focus has always been on attaining higher economic growth. However, in spite of the seemingly satisfactory growth rates in recent times, the unemployment challenge in Ghana is still on the rise. This study therefore contends that it is rather important to find out how the various constituents (sectors of the economy) of economic growth (GDP) affect unemployment rate in Ghana and hence inform us as to which sector should be focused on, rather than just lumping all sectors together in the form of GDP and studying its impact on unemployment. Hence, using annual time series data on Ghana from 1991-2014 and employing the ordinary least square regression technique whiles testing for the robustness of our results, the study found that, only the service sector had a negative significant impact on unemployment rate in Ghana. Thus, attention must be paid towards expanding the service sector in our drive to reduce unemployment in Ghana.

Keywords: *Unemployment, economic growth, economic sectors, Ghana*

1. Introduction

Unemployment remains a headache for most economies in the world given its adverse repercussions. Thus, unemployment aside being a waste of human resource and hence denying government of tax revenue in the form of income tax, it has a negative effect on the total well-being of the jobless as well as a wider social cost in the form of breeding vices such as armed robbery, prostitution e.t.c.

However, one of the major solutions to ousting unemployment is attaining higher and stable economic growth. Given the above, attaining long term economic growth remains one of the most important macroeconomic goals of governments all over the world. This stems from the backdrop that rising economic growth is expected to translate in to better livelihoods by improving the earnings of those already employed as well as providing job opportunities for the unemployed.

Data has shown that Ghana has experienced quite a satisfactory economic growth rate (GDP growth rate) in recent times. However, the unemployment challenge in Ghana does not seem to be dwindling at all. This study therefore contends that it is rather important to find out how the components (sectors of the economy) of economic growth (GDP) affect unemployment rate in Ghana and hence inform us as to which sector should be focused on rather than just lumping all sectors together in the form of GDP and studying its impact on unemployment. This study therefore investigated how value additions in the Agric, service and industry sectors affect unemployment rate in Ghana.

2. Brief Review of Literature

The relationship between unemployment rate and economic growth may be loose in the short run. Unemployment may not fall significantly in the wake of initial economic growth preceding a recession because there could be less utilized workers on the payrolls of some firms given that laying off workers as a result of low demand for products and rehiring them when demand increases has its attendant costs. Therefore, firms may be able to initially produce more to meet rising demand without employing new workers by increasing the productivity of their current employees. Once workers are now being fully utilized, it is only through employing new workers would output grow faster than productivity growth rate. Hence as economic expansion increases, the joint rates of growth in labour supply and labour productivity would determine output growth. Therefore, so far as growth in labour productivity lags behind growth in real gross domestic product (GDP), employment will rise. If labour force growth lags behind employment growth, unemployment rate will fall (Levine, 2013).

There exists an inverse relationship between variations in the rates of unemployment and real GDP growth over a longer period of time. This is what has come to be known as the Okun's Law (In order to maintain a stable unemployment rate, a real GDP growth rate that is almost equal to the potential output growth rate is required usually). Therefore, growth rate in potential output remains the key to the relationship between the variations in the growth rate of real GDP and unemployment rate in the long run. When there is no growth in productivity, so far as each new additional labour force is employed, growth in labour supply and growth in output would be the same. If the growth in labour supply exceeds the growth in GDP, unemployment will rise and vice versa. If the growth rate in labour force is the same as the growth rate in GDP when there is productivity growth, unemployment will rise because a lot of people would enter the labour force exceeding the number needed to produce a given amount of goods and services. Thus, in the long run, unemployment rate will fall only when the growth in GDP exceeds both the combined growth in potential output (productivity) and the growth in labour supply (Levine, 2013).

On the empirical front, Makun and Azu (2015) found a long run relationship between unemployment and economic growth in Fiji. Akeju and Olanipekun (2014) found a long run and a short run relationship between unemployment and economic growth in Nigeria. Madito and Khumalo (2014) found a negative relationship between economic growth and unemployment in South Africa. Yelwa, David and Omoniyi (2015) also have conducted a study on unemployment and economic growth in Nigeria.

On Ghana, Aryeetey and Baah-Boateng (2007), Baah-Boateng (2013), Renner (2014) and Aryeetey and Baah-Boateng (2016) have conducted studies on unemployment. However, given the magnitude of the unemployment problem in Ghana, more research is needed in order to oust or quell the unemployment challenge. Further to the best of our knowledge, this study would be the first to study how value additions in the various sectors of the economy (Agriculture, Service and Industry) affect unemployment rate at the macro level using time series data in a single regression model. Thus, the study contends that rising GDP growth rate in itself alone is not enough to curb unemployment rate in Ghana if most of the growth in GDP is contributed by sectors with less labour absorption capacities. Therefore, given that the productivity and labour absorption capacities of sectors in the economy are not the same, knowing which sector contributes most to the reduction in unemployment rate agenda is needed in order to inform better policies.

3. Methods

The study utilised time series data from 1991-2014 on Ghana from the World Development Indicators Data base of the World Bank. Total Unemployment as a percentage of total labour force (modelled International Labour Organization (ILO) estimate) was the main dependent variable of the study which shall be denoted as UNEM.

The Independent variables were Agriculture value added as a percentage of GDP (AGRIC), Industry value added as a percentage of GDP (INDUSTRY), Services value added as a percentage of GDP (SERVICES) and Inflation (INF), measured as GDP deflator, annual.

In order to find out how the growth in the various sectors of the economy affected unemployment rate, the study adopted the ordinary least square regression technique as the empirical model of estimation as specified below:

$$LN\text{UNEM}_t = \beta_0 + \beta_1 LN\text{AGRIC}_t + \beta_2 LN\text{SERVICE}_t + \beta_3 LN\text{INDUSTRY}_t + \beta_4 \text{INF}_t + \mu_t \quad \ldots\ldots (1)$$

The variables were specified in natural logarithm form in order to bring them to the same unit and also correct for possible heteroskedasticity. Also, the study adopted the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity, the Breusch-Godfrey LM test for autocorrelation and the Ramsey RESET test of Functional Form in order to further show the robustness of our results.

4. Results and Discussion

This section presented the results and discussion of the impact of the value additions in the various sectors of the economy on unemployment rate in Ghana as outlined below.

Variable	Coefficient	Standard Error	P-value
LNAGRIC	.7454805	.619112	0.243
LNSERVICE	-1.011075	.3871118	0.017
LNINDUSTRY	.2492058	.4073491	0.548
LNINF	.0061555	.1897351	0.974
Constant	2.145063	2.326145	0.368

Table 1: The Impact of the Various Sectors of the Economy on Unemployment Rate in Ghana
Source: Authors Computation from WDI. Number of obs = 24, Prob > F = 0.0034 and R-squared = 0.5462

The overall P-value (Prob > F) of our model which was significant at 1% showed the robustness of our results. Further, the R-squared of 0.5462 showed that about 55% of the variation in the unemployment rate is explained by the independent variables.

Precisely from our results, value additions in the Agric sector and the Industrial sector were found to have positive coefficients; however, none of them was significant. Thus value-additions in Agric and Industry did not have any significant impact on the unemployment rate in Ghana based on the WDI data for the sampled period 1991-2014. Also, inflation was found to have a positive coefficient but insignificant.

Further, the Service sector was found to have a negative coefficient of -1.011075 which was significant at 5%. The implication is that, value additions in the Service sector have negative impact on unemployment rate in Ghana. Thus a 1% increase in the value additions in the Service sector would lead to a 1% fall in the unemployment rate in Ghana. This tells us that based on our data, the service sector plays a very significant role in reducing unemployment in Ghana and hence further corroborating the reason why the service sector has been the greatest contributor to the GDP of Ghana in recent times.

H_o: no serial correlation			
lags(p)	**Chi2**	**df**	**Prob > chi2**
1	0.497	1	0.4810

Table 2: Breusch-Godfrey LM test for autocorrelation
Source: Authors Computation from WDI

Ho: Constant variance	
Chi2(1)	**Prob > chi2**
0.38	0.5392

Table 3: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Source: Authors Computation from WDI

Ho: model has no omitted variables	
F (3, 16)	**Prob > F**
0.86	0.4838

Table 4: Ramsey RESET test of Functional Form
Source: Authors Computation from WDI

Also, further results from Tables 2, 3 and 4 proved that our model did not suffer from autocorrelation, heteroskedasticity and incorrect functional form and hence additionally proving the robustness of our results.

5. Conclusion

Based on the findings, the study can conclude that the Service sector is the most important sector with regards to reducing unemployment rate in Ghana. Therefore, in stakeholders attempt to device policies towards reducing unemployment rate in Ghana, attention must be paid towards expanding the Service sector.

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