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THE IMPACT OF INFLATION ON UNEMPLOYMENT IN NIGERIA (2001-2013)

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ABSTRACT

The Impact of Inflation on Unemployment in Nigeria (2001-2013). The study set three major objectives which include determine the relationship between economic growth, inflation and unemployment, analyses the effects of inflation in Nigeria and assess the effects of unemployment in Nigeria. Secondary data obtained from National Bureau of Statistics, Central Bank of Nigeria and Federal Ministry of Labour and Employment was used for the paper. The study used a model in which inflation and unemployment were the dependent variable and independent variables. The analytical technique used includes Ordinary least square (OLS) technique, F-test. The paper showed that monetary and fiscal policy were effective in the control of the inflation and unemployment since the coefficient of determination ($R^2 = 0.50$ or 50% was significant. This was re-confirmed by the F-test value (4.91). The paper recommends a policy redirection to improve output; this will occur by making efforts to increase productivity, which will lead to reduction in unemployment and inflation. To curb the surging rate of unemployment, efforts must be put in place to achieve a labour intensive method of production instead of concentrating on the capital intensive method which will take away jobs that individuals can do. Furthermore, there must be concrete efforts to ensure our porous borders are well managed to forestall leakages, which is very pivotal for the reduction of unemployment and inflation; thereby improving the level of local production.

Keywords: Inflation, Unemployment, Development, Nigeria

JEL Index Classifications: E31, P24, P44.

1. INTRODUCTION

The economic and political landscape of any country hinges on inflation and unemployment because of the changes it can ignite in the system. Actually among the two, the trade-off is curtailed. Therefore, on the long run no trade-off will occur; thus, they both may now move in the same direction. However, this may not occur at the same time (Wallich, 1979). Overtime, economists have tried to establish the relationship between inflation and

unemployment. These two variables are linked together economically. The relationship that exist between them are inversely correlated. When unemployment is high, inflation is low and otherwise (Umaru & Zubairu, 2012). In any economy, inflation and unemployment are always on the “front burner”; all economies will always intend to keep them both on a low rate mostly on a single-digit rate because this will tend to bring about stability in the macroeconomic policies of the country. This stability is pivotal to effectively achieve growth and development in the economy and also the attainment of its set out goals and objectives of its economic policies (Orji, Orji-Anthony, & Okafor, 2015).

When money supply is altered, this in turn leads to inflation. Therefore, when money supply is increased, it will have a multiplier effect on the price of goods and services in the economy which will lead to its increase also. Hence, inflation is the upward movement in the prices of goods and services. The classical economist defined the long term Phillips curve to be the natural rate of unemployment in an economy. It states that on the long run, inflation and unemployment are not meant to have a relationship (Phillips, 1958)(Friedman, 1968).

If employment rate is less than the natural rate, thus inflation rate will exceed the limits of expected rate and therefore the unemployment rate is higher than the acceptable limit, therefore the inflation rate will be less than the expected rate (Phillips, 1958) (Friedman, 1968). Inflation as explained by the Keynesian implies the supply of money that keeps rising. They focus mainly with institutional crises that people face, when the industries raise the prices of goods and services. Industries make significant yields when they increase the prices of their goods and services. Furthermore, the Central Bank increases the supply of money to ensure the continuous functionality of the economy (Phillips, 1958)(Friedman, 1968).

Inflation and unemployment are very critical to the economic growth and development of any economy. These two factors are mainly used to examine the level of poverty in developing economies. Therefore, countries are encouraged to continually increase their level of produce because this will help to cushion the effect of inflation in the economy. Also, increase in the level of goods and services will improve the standard of living and therefore create social harmony within the country. The inflation rate in the economy of Nigeria has in recent years been fluctuating mainly due to the inconsistencies in the Real Gross Domestic Product (RGDP) (CBN, 2004). Also, other economic indicators such as unemployment rate are indicators of an ailing economy; this study is conducted to examine the impact of inflation on unemployment in Nigeria. The precise purpose of the study is to empirically examine the impact of unemployment and inflation on economic growth to:

- (i) Determine the relationship between economic growth, inflation and unemployment.
- (ii) Analyses the sources and outcome of inflation in Nigeria.
- (iii) Assess the sources and outcome of unemployment in Nigeria.

2. THE CONCEPT OF INFLATION AND UNEMPLOYMENT

The empirical macroeconomists find inflation and unemployment as essentially challenging and therefore a lot of studies have been conducted in more advanced countries. Some suggestions arise on if possible to stabilize without recession. Also, some models have suggested that stabilization might be expansionary especially in countries where high inflation is prevalent. However, stabilization without recession is most likely unachievable (Kamin & Klau, 1998). Inflation is well known to be a situation in the economy when the money supply is growing faster than the production of new goods and services in the same economy (Hamilton, 2001). Inflation is further defined to be the general price increase in goods and services over a particular time mainly for a long period (Balami, 2006). Arguments have occurred among economists in trying to distinct Inflation from an economic occurrence which result in price increase of goods and services at a certain time or when there is an upward movement in prices of economic goods and services in a specific slender group (Piana, 2001).

The International Labour Organization (ILO) defines the unemployed as those relevant population in the economic activities among the entire populace that are willing to work but have no work. This also comprises of those who left work willingly (World Bank, 1998). The main sources of inflation and unemployment are namely fiscal and monetary policies and balance of payment. An increase in money supply leads to monetary policy inflation, while fiscal policy involves mainly budget deficits. Also, fiscal policy inflation is closely knitted to the explanation given above on monetary policy inflation because money creation is mostly used to finance government deficits. Furthermore, on the aspect of balance of payment policies; high exchange rate is very essential. This is so because a rise in exchange rate leads to increase in import prices and also increases inflationary expectations which therefore causes inflation (Umaru, Donga, & Musa, 2013).

The Phillips curve is divided into some assumptions: the negative, the natural hypotheses and the positive hypothesis. The explanation of the link between inflation and unemployment has gone through some phases since the conclusion of World War II. The first phase was the assent of the Phillips hypothesis (Friedman, 1976). Phillips discussed that there was a consistent negative link between the level of unemployment and the rate of changes in wages. The reduction in wages is associated with high levels of unemployment while increase in wages is associated with low level of unemployment. The change in wages is associated to changes in prices of goods and services by allowing for a rise in the level of productivity and treating the price excesses over wage cost through a consistent mark-up factor (Phillips, 1958) (Friedman, 1976). A research was conducted on inflation and unemployment in the EU for 1998-2007; it was established that the simple linear correlation coefficient between inflation and unemployment is negative. Invariably, it leads to the conclusion that their relationship is not excessive and negative (Popovic & Popovic, 2009). Another research was conducted using Nigeria's economic situation to examine the trade-off between inflation and unemployment in less developed economies. OLS model was used and it was observed that there was no trade-off between the two factors. This further showed a case of stagflation in the economy of Nigeria (Abachi, 1998).

Also, there was a test on the connection between money, inflation and output through the usage of cointegration and granger-causality test analysis. The research showed that there was non-availability of a cointegrating vector in the series used. Granger concluded that money supply causes output and inflation. This therefore ascertains that monetary policy has a major input on price stability in the economy of Nigeria simply because the variation in price level is majorly influenced by money supply. Therefore, inflation in the economy is mainly a monetary issue (Omoke & Ugwuanyi, 2010).

Inflation has grievous effect especially on fixed incomes in an economy, this has drastic effect on their standard of living due to reduction in real income, savings and capital formation (Buhari, 1987). Economic growth is drastically affected by inflation and therefore limits economic development in a country, this leads to the creation of unrest among the populaces (Adamson, 2000).

3. MATERIALS AND METHOD

This will cover the Federal Republic of Nigeria, an african country which is on the Gulf of Guinea. The Country is the most populated black nation in the World with a population of about 180 million people. It comprises of 36 states and the capital is Abuja. The country is a major oil producer and its economy mainly depends on it. Secondary data were collected from the National Bureau of Statistics (NBS), Central Bank of Nigeria (CBN) and Federal Ministry of Labour and Employment.

The Model analysis was conducted using the Ordinary Least Square (OLS) regression. Data on inflation and unemployment rate was used for the estimation of parameters of the

Model. The coefficient of determination (R^2), T-test, F-test and Durbin Watson (DW) statistics were used. Also, to confirm the level of serial correlation among variables, Durbin Watson statistics was used.

3.1 Linear Regression model

This study made use of model from Okun’s to integrate inflation and unemployment as the dependent and independent variables. While economy growth is influenced by increase in productivity. The reduced form of the Phillips assumption is the Okun’s law.

The model is explained as:

$$UNEMPL = f(INFLA) \dots \dots \dots (1)$$

$$\text{Hence, } UNEMPL = \alpha + \beta INFLA + \mu \dots \dots \dots (2)$$

Where INFLA is the inflation rate and UNEMPLO is unemployment rate.

α and β - Parameters

μ - Error term (white noise)

A’ priori expectation:

It is anticipated that: $\alpha > 0, \beta > 0$

Model II (Granger causality model)

$$UNEMPL = \sum \alpha UNEMPL_{t-1} + \sum \alpha INFLA_{t-1} + \mu_t \dots \dots \dots (3)$$

Decision rules

The decision rule under causality models for equation (3) is to test for null hypothesis to know that the estimated coefficients are equal to zero(0) at an appropriate level of significance or to make use of the rule of thumb that if t-statistic is at least 2 the null hypothesis is rejected otherwise accepted. Therefore, Equation (2) INFLA causes UNEMPL if $H_0: = 0$ is rejected. Therefore, if the estimates of the parameter come up with signs or sizes that do not go in accordance to economic assumptions, hence should be rejected, otherwise if there is a good reason to accept that in the particular instance, the principles of economic assumptions do not stand.

$$UNMPL = F(X) + U_t \dots \dots \dots (4)$$

Where:

UNMPL = Unemployment rate (Y); X = Inflation rate (X); U_t = Stochastic (error) variable

In the above model, the unemployment is the dependent variable and Inflation is the independent variable hence: $UNMPL = F(X) + U_t \dots \dots \dots (5)$

4. RESULTS

The results of the data analyses show that a unit increase on unemployment rate would bring about 0.017 increase in inflation rate in the short-run when there is tradeoff but in the long-run when tradeoff disappearance, a unit increase on unemployment rate would bring about -0.421 decreases in inflation rate. The result from the model above shows that R^2 is 0.50. This simply implies that at least %0 percent of the variation in the unemployment rate is discussed by the independent variables. The coefficient of inflation rate is positive and

significant at the level of significance of 5%. This implies that the increase in unemployment rate have negative effect on the growth of the economy.

Table 1: Regression Data¹

Year	Inflation rate (%)	Unemployment Rate (%)
2001	16.49	13.6
2002	12.14	12.6
2003	23.84	14.8
2004	10.01	13.4
2005	11.57	11.9
2006	8.57	12.3
2007	6.56	12.7
2008	15.05	14.9
2009	12.14	19.7
2010	12.10	21.4
2011	10.80	23.9
2012	12.90	27.4
2013	8.84	24.7

The *test of goodness of fit* (R^2) shows that there is a significant coefficient of determination (R^2) which was ($R^2 = 0.50$). This indicates that 50% of the variation in unemployment rate which is the dependent variable was explained by inflation which is the independent variable. 0.50 or 50% was not given sufficient detailed report about because it was not essential to the model. Also, by considering the significant level of 5%, the analyses indicate that there was prominent relationship between the inflation and unemployed rate, thus $F\text{-test} = T\text{-cal} (4.91) > T\text{-tab} (3.14)$ this reconfirmed the value of $R^2 = 50\%$ which was significant. This is because the $f\text{-cal} (4.91) > f\text{-tab} (3.14)$ at 5% level of significance.

Table 2: Log of Regression Data

Year	Inflation rate (%)	Unemployment Rate (%)
2001	1.22	1.13
2002	1.08	1.10
2003	1.38	1.17
2004	1.00	1.13
2005	1.06	1.08
2006	0.93	1.09
2007	0.82	1.10
2008	1.18	1.17
2009	1.08	1.29
2010	1.08	1.33
2011	1.03	1.38
2012	1.11	1.44
2013	0.95	1.39

Source: Researchers' own computation

¹ Source: National Bureau of Statistics, Central Bank of Nigeria and Federal Ministry of Labour and Productivity

Table 3: Unit Root Test

Variables	Level	5% Critical Value	Status
Inflation Rate	-4.416711	-3.2695	2(1)
Unemployment Rate	-3.875793	-3.2195	2(0)

** levels of Significant at 1%, 5% and 10% respectively

5. CONCLUSION AND RECOMMENDATIONS

The study emphasises on evaluating the impacts of inflation on unemployment (2001-2013). The dependent and independent variables used were macroeconomic indicators which are inflation and unemployment. The observation from this study showed that both unemployment and inflation have positive influence on economic growth. This further explains that unemployment does not affect the economic growth of the country, rather inflation significantly improve the activities of the economy through growth in the per capita income.

The results mainly imply that concrete effort should be made by the policy makers to improve the level of productivity in the Nigerian economy to ensure a creation of more job opportunities and activities in the economy which will therefore lead to a reduction in unemployment and the prices of commodities in the economy. This effort will thus improve and increase economic activities in the country at large. Furthermore, emphasis should be made to curb the surging rate of unemployment by making dedicated efforts to put in place labour intensive method of production instead of concentrating on capital intensive methods which will eliminate jobs that can be done by individuals. Finally, there must be concrete efforts to ensure that our porous borders are well managed to forestall leakages which is very pivotal for the reduction of unemployment and inflation; thereby improving the level of local production.

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