Unemployment and Inflation in Nigeria : An Empirical Investigation

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Introduction

One of the most fundamental objectives of Macroeconomics is to sustain high economic growth through maintenance of low rate of unemployment and low rate of inflation. Unemployment and inflation are two intricately linked economic concepts and the nature of the relationship between these two important economic concepts of macroeconomics has seen interest of economists for a long time. Although the aggregate demand and supply framework is crucial for understanding the inflation and unemployment status, this framework does get quite complicated when inertial forces shift the curve upward each period. Economists therefore searched for a simpler device for capturing inflation theory in relation to unemployment. In the late 1950s and early 1960s a striking innovation radically changed the way economists analysed inflation. This was the Phillips curve.

The traditional Phillips curve provided empirical evidence of a trade-off between unemployment gap and wage inflation, because in the short term the Phillips curve happens to be declining. The Phillips curve in the long term is separate from the Phillips curve in the short term. It has been observed by the economists that in the long-run, the concepts ofunemployment and inflation are not related.

The classical economists make this observation clearer, in their opinion, inflation is caused by the alteration in the supply of money. When the money supply goes up the price level of various commodities goes up as well. The persistent increase in the level of prices generally is known as inflation. According to classical economists there is a natural rate of unemployment, which may also be called the equilibrium level of unemployment in a particular economy. This is known as the long – run Phillipscurve. It is therefore assumed that unemployment would stay at a fixed point irrespective of the status of inflation. Generally speaking, if the rate of unemployment is lower than natural rate, then the rate of inflation exceeds the limits of expectations, and in case the unemployment is higher than what is permissible, then the rate of inflation would be lower than the expected levels.

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Keynesians have a different point of view. According to them, inflation is the aftermath of money supply that keeps on increasing.

On unemployment, there remains considerable theoretical debate regarding the causes, consequences and solutions. Classical and Neo–classical economists argue that unemployment is a result of interventions imposed on the labour market from outside, and that market mechanisms are the reliable means of resolving the problem of unemployment. Keynesian economists emphasize the clinical nature of unemployment and recommends interventions as the solution especially during recessions.

Marxism focuses on the relationships between the owners and the workers, whom, it claims, the owners pit against one another in a contestant struggle for jobs and higher wages, which produceunemployment, and is said to benefit the system by reducing wage costs for the owners. As for Marxists, the causes of, and solution to, unemployment require abolishing capitalism and shift to socialism or communism (Marx, 2009).

Unemployment and inflation according to Umaru and Anono (2012) are issues that are central to the social and economic life of every country. The existing literature refers to inflation and unemployment as constituting a vicious circle that explains the endemic nature of poverty in developing countries. Unemployment has been categorized as one of the serious impediments to social progress. Apart from representing a colossal waste of a country's manpower resources, it generates welfare loss in terms of lower output, thereby leading to lower income and wellbeing (Raheem, 1993). Unemployment is a very serious issue in Africa (Bella, 2003) and particularly in Nigeria (Oladeji , 1994 and Umo, 1996).

The early theories of the relationship between unemployment and inflation are postulated on the basis of data sourced from the developed Western World, whose economies are developed and have major economic variables determined within the country, unlike Nigeria and the rest of the developing economies.

There are divergences of opinions as far as unemployment-inflation relationship is concerned. For instance, Original Phillips curve (Traditional Phillips Curve) postulates a stable negative relation between the level of unemployment and the rate of change of wage inflation – high levels of unemployment is being accompanied by falling wages. Monetarists, on the other hand, argue (Expectation- Augmented Phillips Curve) that in the long-run, there is no trade-off between inflation and unemployment. (Friedman 1966 and Phelps 1967). New Keynesian Phillips curve (NKPC), according to Fischer (1977) and Taylor (1979), describes how past inflation, expected future inflation, and a measure of real marginal cost or an output gap, derive the current inflation rate.

All these theories are based on data and information from the Western world which may have little or no applicability in Nigeria. This, therefore, provides the basis for the study of the relationship between unemployment and inflation based on data source within the Nigerian economy so as to formulate a theory that can best explain the situation of unemployment and inflation in Nigeria.

Objectives

- To identify the nature ofrelationship that exists between unemployment and inflation in Nigeria
- To ascertain the existence, or otherwise, of Phillips curve in Nigeria.
- To provide solutions and offer appropriate suggestions and recommendations based on the results obtained.
- To contribute to the body of knowledge on Phillips curve theory as it encompasses unemployment and inflation.

Methodology

This paper makes use of the econometric procedure in estimating the relationship between the variables. The Ordinary Least Square (OLS) techniqueis employed to obtain the numerical estimates of the coefficients of the equation. Augmented Dickey-Fuller test of stationarity is adopted along with Granger Causality test to determine the causation between unemployment and inflation, after which, the Johansen Cointegration test is employed to test the existence of long-run relationship between inflation and unemployment in Nigeria. The ARCH and GARCH technique are then employed to test the volatility of the data because time series data are used.

Results

The bivariate regression results for the relationship between unemployment and inflation indicate that the coefficient of inflation and the intercept are statistically significant at 5% as indicated by its probability value 0.0174 and its correct (negative) sign. The F-statistic value of 6.32, which measure the overall significance of the model, is also statistically significant at 5% level of significance. The R^2 value of 0.1693 (16.93%) is the coefficient of determination indicating that 16.93% of total variation in unemployment is explained by the variation in inflation. The results of Granger Causality revealed that there is no causation between unemployment and inflation in Nigeria. The Johansen Cointegration test results confirm the existence of long-run relationship between unemployment and inflation as indicated by the TRACE-Statistic. The ARCH and GARCH results show that the time series data under consideration are volatile.

Conclusions and Policy Recommendations

This paper empirically investigated the nature of the relationship between unemployment and inflation in the Nigerian economy through the application of OLS methodology, Augmented Dickey-Fuller technique to test for the unit root property of the series, the Granger causality test procedure for causation, the Johansson co-integration test for the existence of long-run relationship of variables, and ARCH and GARCH techniques to test the presence of Volatility in the series. The unit root test results suggested that allvariables in the model were stationary, causality results indicated the absence of causation between the variables, and ARCH and GARCH results suggested that the data were volatile.

The Paper recommends that the policy makers use empirical evidence from studies conducted based on theories and on data sourced within the country in theirpolicy formulation and implementation, and stop implementing policies that are borrowed from the West, which could be workable or effective in the western world. The study also enables recommending diversification of the economy as inflation alone cannot be fully responsible for unemployment.

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