IMPACT OF FINANCIAL DEVELOPMENT ON UNEMPLOYMENT IN NIGERIA

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ABSTRACT

The study investigates empirically the contribution of financial sector development in reducing unemployment in Nigeria using Vector Autoregress.ve framework. By employing Annual data from the period of 1980 to 2014, Domestic credit to the private sector and stock market capitalization were found to have a negative and statistically significant impact on the level of unemployment in the short run and long run respectively. Hence if the financial sector is developed by increasing the amount of money channeled to private investments, the menace of unemployment can be curbed. The Granger causality test also reveals a unidirectional causality running from market capitalization and domestic credit to unemployment. As such the importance of the capital market and the banking sector in creating job opportunities and increasing employment rate cannot be over emphasized. It is therefore important for the government to channel its efforts in creating policies that will aid in developing the financial sector to contribute to curbing unemployment in Nigeria.

Keywords: Domestic credit, Unemployment, Nigeria, Vector Auto Regression.

INTRODUCTION

Financial development refers to a country's decision to allow and promote financial activities. The impact of finance as a catalyst for economic growth has been well established both in theory and in empirics (Roubini and Sala-i-Martin, (1992); King and Levine, (1993); Easterly, (1993); Pagano, (1993); Gertler and Rose, (1994); Levine, (1997); Levine, Loayza and Beck, (2000); Khan and Senhadji,(2003); Chistopoulos and Tsionas, (2004)). The underlying notion here is that well developed financial systems supply information for investment which aid in moving funds from places of excess to places of scarcity which will aid in boosting various sector growths (Beck et al. 2000).

LITERATURE REVIEW

In recent years, the financial turmoil which led to the increase in unemployment in many economies has brought the issue of finance and employment to lime light. This is based on the fact that well functioning financial systems perform numerous functions which include; mobilizing savings; management of risk; monitoring of borrowers; facilitating the exchange of goods and services; obtaining information about investment opportunities and accumulation of capital amongst others. These functions increase technological progress thereby enhancing multifaceted growth within the economy (McKinon, (1973). For instance, by mobilizing and allocating resources to investments which generate high return, profitability is ensured thus leading to an increased demand for labour. More so, by aiding transaction and increasing the supply of the credit facilities and other financial product to individuals, there is ease in financial accessibility which leads to diversification of investment and increased employment opportunities.

Empirically, researchers have examined the various ways in which the financial sector affects employment both at macro and micro levels. For instance, at micro level several studies have focused on investigating the link between financial constraints and employment decisions across firms during era's marked with banking failure and large currency devaluation and the results show significant impact (Blalock, Getler & Levine 2008; Caggesse & Cunat 2008; Benmelech, Bergman and Seru,2011). Pagano & Pica (2011) also analyzed the effects of inter industry job reallocation and employment posit the theory of incomplete contracts. They explain that unemployment is curbed if financial development is allowed to grow. More so, during banking crises employment growth drops in industries that are more dependent on external finance and most of these industries are located in develop economies. However, the limitation to examining this nexus on firm level basis is the availability of tangible data.

Existing literature examining financial development and employment at country level is also scarce and has produced mixed results. For instance, Shabbir et al (2013) investigated the impact of financial sector development on unemployment in Pakistan for the period from 1973 – 2007. Using Autoregressive Distributed Lag (ADRL) Model to ascertain the long run relationship, they find that financial development indicators measuredM2 minus currency in circulation as share of GDP and unemployment in Pakistan have a long and stable relationship. Also, domestic credit to private sector as share of GDPreveals significant and inverse impact on unemployment in the long run but the impact becomes in significant and inverse in the short run. Similarly, Han (2009) also examines the link between financial development and unemployment in the US. His findings show that financial sector crises propelled unemployment for the period under study and this negatively affected the financial affordability for basic needs such as a home, food, clothes, and medical care.

However, the question of whether the development of the financial sector contributes to reducing unemployment has little empirical work in existing literature (some exceptions are Honohan (2004) and Beck, Demirgüç-Kunt and Levine 2004, Aliero et al.2013).

Establishing a link between financial development and unemployment especially in developing economies has become of the essence, as history suggest that financial sector crisis are closely associated with unemployment. For instance during The Great Depression of 1929 - 1933, the value of production fell by 25%, the price level fell below 30% and unemployment rate heightened to about 25% of the labor force, while about 9000 banks closed operations (Bordo, 2000). The global financial crisis of 2007-2009also shoved industrialized economies into brutal recession which led to a rise in unemployment, indebtedness, and the loss of assets (Sasi, 2009; ILO,2012). More so, the wave of globalization presented channels where the financial crises hit hard on developing countries that had less developed financial sectors (Zaman et al., 2012). As Ngwube & Ogbaugu (2014) point out that the Nigerian financial sector was affected by the global financial crisis through the removal of credit lines to Nigerian banks by foreign banks thereby reducing the amount of funds in the industry; this led to the fall of share prices on the stock exchange as such investors suffered heavy capital losses and hence could not repay share purchase loans. The consequence of this rippling effect was the decline of labour market conditions is shown in the unemployment rate that rose from 17.1 % in 2007 to 25.6% in 2011 (NIS,2014).

Similarly, the contention on the relationship between financial sector development and employment is that if financial tools are adequately developed, the persistence of unemployment will be lowered. This is based on the premise that the quantities of credit given to private individuals are adequately channeled for investment and entrepreneurial activities(Pant et al., 2009; Dromel et.al. 2010; Yaroson, 2013). Ibrahim and Aliero, (2012) on the other hand argue that financial development may not necessarily curb unemployment but just lessen financing constraints, by allowing firms to invest in more capital-intensive technologies and expanding output. The aim of this study therefore is to determine the role of financial sector development in reducing the menace of unemployment in Nigeria. Since the available empirical literature on this nexus is scarce, this paper attempts to fill in the gap by providing empirical evidence. The study is divided into Five Sections. Following the Introduction is Section Two which discusses the relevant theories and empirics, linking financial development and unemployment in Nigeria overtime. Section three discusses the methodology used in the study while four presents the results of the study; the paper draws its conclusion in section five with the necessary recommendations.

Unemployment (UNEMP) as a share of labour force is employed as the dependent variable which measures the percentage of people who are willing and able to work and have no jobs. GDP at constant U S $(2005) is employed to measure the depth of growth of the economy. This study also controls for inflation and Foreign Direct Investment as factors that may affect unemployment.

Model Specification
In an attempt to examine the impact Financial Sector Development has on unemployment, the study borrows the econometric model used by Dromel et al. (2010) and Aliero et al (2013)
In the model, we estimate unemployment as a function of its determinants which include: Gross Domestic Product(GDP), Foreign Direct Investment (FDI), and inflation rate (INF) and financial sector development indicators: Domestic credit to the private sector (DCP) and stock market capitalization (MCAP).

$$lnunemp_t = \beta_0 + \beta_1 lnfdi - \beta_2 lninfl - \beta_3 lngdp - \beta_4 lnmcap - \beta_5 lndcp + \varepsilon_t \qquad (1)$$

ε_t in the model indicates error term. All variables are expressed in their log form.

Unit Root Test
The Augmented Dickey Fuller (ADF) test is used to ascertain the stationary properties of the data with the null hypothesis as non stationarity among the time series data (Gujarati, 2004). The test is carried out on their level and first difference with the Akaike Information Criterion (AIC) used to determine the appropriate lag length.
The unit root test is based on the following regression model:

$$T + aY_{t-1} + \sum_{i=1}^{k} d_j \Delta Y_{t-j} + \varepsilon_t \qquad (2)$$

Where Y_t, T and Δ denote a time series, a linear time trend and first difference operator respectively. B0 is a constant; k is respecting the optimum number of lags on the dependent variable, and ε_t is random error term.
The data were also subjected to further diagnostic test to determine the nature heteroscedasticity and auto correlation.

Cointegration Test
After the unit root test, If our variables are integrated in the first order (1), we will go on to determine if long term or equilibrium relationship exist between the variables by conducting the Cointegration test, here the Johansen Cointegration tests is employed (Johansen 1988; Johansen and Juselius, 1990).this test sets up the non-stationary time series as a vector auto regression (VAR) of order p:

In the same vein, Aliero, Ibrahim & Shuaibu (2013) investigate the relationship between financial sector development and unemployment in Nigeria. Annual time series data from 1980 to 2011 period was the sample period under study with the Auto Regressive Distributed Lag (ARDL) Bound Testing technique for Cointegration as the econometric strategy. The study finds that formal credit allocation in rural areas has both short run and long run effect in reducing unemployment. Furthermore, Oludoyi, Agama & Olu (2013) examine employment generation from the angle of financing in Nigeria for a period from 1984-2011. By controlling for they use determinants of employment generation which include money supply, lending rate and inflation, the study show a positive and statistically significant relationship between financial development and unemployment as measured by broad money and the absence of long run relationship with unemployment and lending rate. Contrastingly, Hassan, Wajid & Mamoon(2013) find that financial development does not reduce unemployment significantly in the short run and in the long run in Pakistan whilst empirically analyzing the impact of financial development; foreign direct investment and urban population as share of total population on unemployment for the period from 1973 – 2010.In view of this, this paper attempts to fill a gap in literature by providing empirical evidence of the link between financial development and employment generation, with specific reference to Nigeria.

METHODOLOGY

Data Sources
The dataset for all the indicators of this study which include Unemployment as Percentage of Labour Force; Domestic Credit to Private Sector as share of GDP and market capitalization as proxies for Financial Development, exchange rate and GDP were obtained from the World Development Indicator databank and National Bureau of Statistics respectively. The dataset for the empirical investigation is from 1980 to 2014 and time sample size is based on availability of data.

Definition of Variables
Domestic Credit to the Private Sector (DCP) as a percentage of GDP measures the activities of the banking sector. It also measures the quality and quantity of investments since the quantity of credit facilities given to private individuals is believed to be adequately channeled for investment, (Levine and Zervos, 1998; Ghirmay, 2004; Caporale et al 2009; Shabir et al, 2012 Yaroson, 2013).

Market capitalization (MCAP) as a share of GDP which is the value of shares listed on the Nigerian Stock Exchange, measures the size of the capital market. The assumption behind this measure is that the overall market size is positively correlated with the ability to mobilize capital and diversify risk on an economy-wide basis. Although this does not reveal the whole development of the stock markets as distortions like high taxes hinder investors from listing on the stock market (Shabir et al, 2012; Beck et al, 1999).

4. EMPIRICAL FINDINGS

Table 1. Descriptive statistics

Variable	Obs	Mean	Std.Dev	Min	Max
LNUNEMP	35	2.041199	0.7512119	0.6418539	3.277145
LNGDP	35	25.07023	0.4667198	24.50055	25.89627
LNMCAP	35	2.337723	0.6198282	1.316329	3.94884
LNDCP	35	2.638301	0.3306923	2.189871	3.652996
LNINFL	35	2.427173	1.984559	-0.894700	4.982202
LNFDI	35	0.9282355	0.6757783	-0.409899	2.382556

Table 2 Augmented Dickey Fuller Unit root test

Variables	Level	First Difference
LNUNEMP	-1.762 (0.7226)	-3.499*** (0.0395)
LNUNEMP$_{t-1}$	-0.365 (0.9158)	-5.169*** (0.0000)
LNGDP	1.793 (0.99883)	-4.776*** (0.0001)
LNMCAP	-1.948 (0.3098)	-5.803*** (0.0000)
LNINFL	-1.753 (0.4039)	-2.733** (0.0686)
LNDCP	-2.400 (0.1418)	-5.280*** (0.000)
LNFDI	-2.990*** (0.0358)	-9.695*** (0.000)

The value in brackets show the McKinnon p value . ***significant at 1% ** significant at 5% *significant at10%

The table 4.1 presents the results of the stationarity test employing the Augmented Dickey Fuller (ADF) for the variables in their level and first differences. We find that all the variables are stationary in their first difference; as such we carry out our Cointegration test and VAR analysis with the variables in their first differences.

$$\Delta y_t = \Pi y_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta y_t + \beta x_t + \square_t \quad \ldots\ldots\ldots\ldots(3)$$

$$\Pi = \sum_{i=1}^{p-1} Ai - 1\Gamma = \sum_{i=i+1}^{p} A_i \quad \ldots\ldots\ldots\ldots(4)$$

Where yt is a k-vector of the I (1) variables, xt is a vector of the deterministic variables, r is the number of the cointegrating relations, and ε_t is an identically and independently-distributed error term. The Eigen value and trace test are used in testing the hypothesized existence of the cointegrating vectors. The trace test statistic tests the null hypothesis that the number of distinct cointegrating vectors is less than or equal to r against a general alternative. The maximum Eigen value test statistics on the other hand tests the null hypothesis that the number of cointegrating vectors is against the alternative of r+1 cointegrating vectors.

Granger Causality Test

A VAR system is constructed to examine the null hypothesis that financial development does not Granger-cause employment. This method is appropriate as it lessens the dilemma of differentiating between endogenous or exogenous variables while investigating the dynamic relations between all the endogenous variables in stationary multivariate systems without imposing a priori structural restrictions. Also, the problems related with simultaneous equation models are avoided because VARs do not include current variables as repressors'.

As such, a variable X_{1t} is said to Granger cause another variable X_{2t} if any lagged value of X_{1t} is significant in the equation for X_{2t}. the null hypothesis will be accepted if all the lagged values of X_{1t} are jointly insignificant in the equation. This study relies heavily on the work of Dromel et al (2010), in which the equations in the VAR system contain measures of financial development. The Schwarz information criterion (SIC) is used to determine the lag length

The VAR equations are specified as follow:

$$X_t = \alpha + \sum_{j=1}^{k} \beta_j \quad X_{t-j} + \sum_{j=1}^{k} \gamma_i \quad Y_{t-j} + u_{1t} \quad \ldots\ldots\ldots\ldots(5)$$

$$Y_t = \alpha' + \sum_{j=1}^{k} \theta_j \quad X_{t-j} + \sum_{j=1}^{k} \gamma_i \quad Y_{t-j} + u_{2t} \quad \ldots\ldots\ldots\ldots(6)$$

Estimation of Coefficients

In table 4.5 below, the outcome of the regression analysis in an attempt to examine the impact the development of the financial sector has on employment generation in Nigeria is presented. The results show that domestic credit to the private sector contributes significantly in curbing unemployment and it is statistically significant with a p-value of 0.077.Therefore, if the value of domestic credit channeled to the private sector for investment increases by 1%, the rate of unemployment will fall by 28 percentage points. Furthermore, the effect of market capitalization on unemployment reduction is paramount as a slight increase in the size of the capital market will lead to a fall in the level of unemployment which is also statistically significant. More so, an increase in foreign direct investment and GDP leads to a statistically significant fall in unemployment rate by 2.4 and 12 percentage points respectively. All the variables enter the model with apriori expectation and about 75% of unemployment rate is explained by its independent variables.

Table 4.5 estimation of coefficients

Dependent Variable= Unemployment			
Variables	Coefficient	T Stats.	P Value
LNFDI	-0.2464063	-2.53	(0.001)
LNDCP	-0.239793	1.77	(-0.077)*
LNINFL	-0.5287339	-1.24	(-0.214)
LNGDP	-1.252202	-2.19	(-0.029)**
LNMCAP	-0.2056576	-2.11	(-0.034)**.
Constant	7.428553	0.117	(1.57)
F stats	15.00		
Prob (F. Stats.)	0.000		
Adj R^2	0.700		
D. Watson	1.841		

(*,**,***) denotes 10%, 5% and 1% respectively

Granger Causality Test

The Granger-causality test is employed to examine the direction of causality between financial sector development and unemployment in Nigeria. The decision to reject or accept the null is based on the probability at 1%, 5% and 10% level of significance.

Table 4.3 Lag Length Criteria

Lag	LL	LR	FPE	AIC	HQIC	SBIC
0	19.7358	NA	1.1e-08	-1.30817	-1.2434	-1.00973
1	53.4781	67.485	1.6e-08	-1.09315	-0.639776	0.995893
2	99.8598	92.763	1.8e-08	-2.08189	-1.23991	1.79776
3	1703.63	3207.5*	8.8e-71*	-151.393*	-150.163*	145.723*

* indicates lag order selected by the criterion

LR: Sequential Modified LR Test Statistic (Each Test At 5% Level)

FPE: Final Prediction Error

AIC: Akaike Information Criterion

SIC: Schwarz Information Criterion

HQ: Hannan-Quinn Information Criterion

Table 4.4 Cointegration Test Results

Maximum Rank	Eigen value	Trace Statistics	5% Value	Critical
0	NA	149.4757	94.15	
			68.52	
1	0.91060	96.3550		
2	0.893929	47.1274*	47.21	
3	0.67714	22.2555	29.68	
4	0.343936	12.7998	15.41	
5	0.32191	4.2534	3.76	
6	0.17579			

(*) denotes significance

Table 4.4 above, shows that there are at least two cointegrating relationships among the variables used in this study as the trace statistics is greater than the critical value at 5% with a value of 47.1274

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Conclusion and Recommendation

This study examined the impact of financial sector development on the level of unemployment in Nigeria. The results indicate a long run relationship between financial sector development and unemployment in Nigeria with the a unidirectional causality running from financial development as measured (by Domestic credit and market capitalization) to unemployment. Based on our findings, the study therefore concludes that the financial sector contributes in curbing unemployment.

As a result of the aforementioned, the study therefore recommends that the Central Bank of Nigeria should enact policies that will strengthen and deepen the banking and capital market sector which may perhaps facilitate the provision of the necessary financial support firms and the growing unemployed in the country. Also, Expansionary monetary policy should be pursued so that velocity of money in circulation would speed up the volume of transactions of goods and services. This will increase the requirements for labour in order to contain the pressure for the demand of goods and services and so severity of unemployment would drastically fall to the barest minimum.

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Based on the results reported in table 4.6 financial sector development (as proxied by domestic credit to the private sector (DC.²) and market capitalization (MCAP)) Granger causes unemployment (UNEMP) but not the reverse at 10% significant level.

Table 4.6 Granger Causality Test

VAR Estimates	F Statistics	Probability	Decision	Direction of Causality
DLNUNEM does not Granger-cause DLNMCAP	0.60814	0.738	ACCEPT NULL	MCAP ⟹ UNEMP
DLNMCAP does not Granger cause DLNUMEP	5.261	0.172*	REJECT NULL	UNIDIRECTIONAL
DLNUEM does not granger cause DLNDCP	0.000	0.9764	ACCEPT NULL	DCP ⟹ UNEMP
DLNDCP does not granger cause DLNUEMP	5.0044	0.082*	REJECT NULL	UNIDIRECTIONAL

(*) denotes level of significance at 10%

Discussion of findings

The activities of the banking sector in Ngeria as well as its capital market are the major contributors of the deepening of the financial sector in Nigeria which accounts for almost 10% of the nation's economic growth. Based on the findings in this paper it shows that the activities of the financial sector play a significant role in reducing the level of unemployment in Nigeria. Therefore, the amount of money in terms of credit that is being channeled by the banks to the private sector can aid in reducing the unemployment rate. This is so because, when private business and individuals collect credit from the banks to set up and expand their businesses. This in turn leads to demand for labour by these businesses and as such curb unemployment. This result provide empirical evidence to support the findings of Aliero et al (2013) and Dromel et al, (2010). Similarly, when firms generate money through the capital market, it leads to expansion of businesses which increase the demand for labour thus a decline in unemployment rates (Shabir et al,(2012; Pagano & Pica (2011)).

More so, by channeling credit to the private sector, there is more spending power which also increases GDP and hence curbs unemployment. The one way causal relationship show that the development of the financial sector also causes unemployment As such, in cases of financial crises and bankruptcy, where firms are unable to raise funds through the capital markets because of the loss of values of their shares they tend to lay off workers thereby leading to an increase in the level of unemployed in the labour market.

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