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UNEMPLOYMENT AND EXCHANGE RATE UNCERTAINTY IN AN EMERGING SUB-SAHARAN ECONOMY: A CASE FOR NIGERIA (1970-2005)

P. L. AKPAN

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ABSTRACT

This paper examines the implications of exchange rate instability on the macroeconomy with particular reference to unemployment. It focuses on the gross domestic investment and capacity utilization. The ordinary least square technique (OLS) was adopted using time series data on exchange rate, unemployment, gross domestic investment and capacity utilization. Data were sourced from central bank of Nigeria statistical bulletin, federal office of statistics of Nigeria and allied sources. Exchange rate is measured by three years moving average of standard deviation of real exchange rate. This paper maintains that more foreign exchange should be appropriated for and or allocated to capacity utilization and building in order to enhance greater productivity in the economy thereby reducing the magnitude of unemployment. A negation of this fosters the severity of unemployment with all its attendant ills.

KEYWORDS: Unemployment, Exchange rate, Uncertainty, Economy, Development

INTRODUCTION

Unemployment and exchange rate instability jointly constitute severe developmental problems in developing economies. These problems then impact seriously on the achievement of macroeconomic objective of full employment, price stability, economic development and balance of payments viability. Thus in recognition of these problems vis- a-vis achievement of a realistic exchange rate of the naira, reduction of unemployment and achievement of a stable exchange rate of the naira have become policy issues which attract the attention of government.

Monetary authorities in Nigeria and even experts at the World Bank and International Monetary Fund (IMF) jointly and severally agree that the basic macroeconomic problems of Nigeria are associated with high rate of unemployment and unrealistic exchange rate of the naira. When naira is over-valued, export is discouraged as it becomes more expensive and on the other hand, import is encouraged by cheapening it. Over-valued naira tends to be a source of undermining effective resource utilization. It encourages capital fight and also leads to cheapening import thereby resulting in Nigeria being import dependent. Thus, the implication of this has culminated in the essential part of the series of reform problems. These reforms have changed from Structural Adjustment Programme (SAP) to guided deregulation and the present National Economic Empowerment and development Strategy (NEEDS). The implication has been high unemployment, inflation, declining productivity and instability of exchange rate. It is therefore difficult to predict foreign exchange market as demand plan is unstable (Edwards, 2005). This breeds disinvestments in countries. Since the population explosion, poor countries over the years have been characterized by unemployment or disguised unemployment. Disguised unemployment has been transforming itself from the rural areas into open unemployment in the major cities and towns of the countries. There has been an alarming rate of rural – urban migration. The percentage rate of unemployment in the urban areas of developing nations is basically greater than the rate applicable in some developed nations of the world. This has persistently been so over the years.

The emergence of unemployment in the cities and towns at an alarming proportion is accounted for by factors. These factors are associated with the incentive to labour migration from the rural to the urban areas. Following this is the incapability of the urban areas to provide employment in view of insufficient factors of production to work with labour and capital in particular. The pull and push factors are actively at work. While push factors relate to the restricted job opportunities in rural areas coupled with greater willingness vis-à-vis desire to move facilitated by improved educational, communicational and technological compatibilities in the country, the pull factors are concerned with industrialization, and allied development which provides jobs at greater real wages. This condition is characterized by the mass movement of people from the rural to the urban area with expectation of higher real wages in the urban than in the rural areas. Unemployment has a functional relationship with exchange rate, inflation, capacity utilization, labour force, gross domestic investment and government expenditure on unemployment. (Elbadawi, 1994)

The object of this paper is to determine the implications of exchange rate instability on the macroeconomy with particular reference to reducing the rate of unemployment. For ease of exposition, the paper is divided into five sections. Closely following this introduction is the theoretical underpinning in section two. Section three presents the analytical methodology while section four focuses on data analysis and

P. L. Akpan, Faculty of Management Sciences, Cross River State University of Technology, P.M.B 3882, Uyo, Nigeria.

discussion of results. Section five offers policy recommendations and terminates the paper with concluding remarks.

THEORETICAL UNDERPINNING

Unemployment is viewed as the percentage of labour force without a job and labour force represents those people of working age who would like to work if suitable jobs are available. The Longman Advanced learners Dictionary defines unemployment as the number of people without a paid job or the state of being without a remunerated job, but available to work. Thus one is adjudged as being unemployed if he does not have job but is willing to and available for work. Pakins (1998) opines that the unemployment rate is the percentage of the people in the labour force who are unemployed. The unemployment rate is adequately the proper yardstick and/or measure of underused labour resources even though it does not recognize workers who are discouraged, those without jobs but are available for work and are equally willing to work even though they are not so delighted looking for work in view of frustrating experiences. Unemployed has become a persistent feature of economic life.

Thus, the menace of unemployment as a socio-economic problem in developing countries is devastating. This has been one of the numerous challenging and manageable hurdles confronting most developing economies in the world. The reasoning that economist started to focus more attention to the problem of unemployment during the late 1700s is a fact that cannot be gainsaid.

As postulated by Tadaro (1982) a number of Third World Countries are plagued with rising urban unemployment and underdevelopment. About 13 per cent of the urban labour force or approximately 45 million people belong to the category of open unemployment in Africa, Asia, the Middle East and Latin America. Put simply, people without any regular or part-time job are classified into this group. The symptoms of unemployment in these countries account for the pervasive constraints of development. Thus, growing unemployment hinders economic development. During the last decade, human conditions greatly deteriorated as problems associate with unemployment keep increasing astronomically despite the expenditure of government in this regard. In view of the development goals of government, public expenditure and employment creation tend to receive more attention in Nigeria's quest for development. Public expenditure is concerned with public spending aimed at achieving development and basic macroeconomic objectives put in place by the government itself. Government spends for the sine qua non goal of achieving economic development. Economic development has linkage with employment generation. Thus employment generation remains at the forefront of achieving high development standards. Employment generation programmes are concerned with tackling mass unemployment, skill acquisition, entrepreneurship, self reliance, self employment and capacity building programmes etc.

When examining social, political and cultural indicators, it is evident that Nigeria faces high and increasing rate of unemployment especially among the youth. This explains the high rate of crimes and socio-economic/political tension in some regions of the country. As a follow up action to address the problems of unemployment, the world submit for social development held in Denmark 1995 and further follow up conference of the world social submit held in March 1991 at Nairobi, Kenya articulated the contending issues regarding employment creation. The Summit declarations committed participating states to "the promotion of the goal of full employment as a basic priority of economic and social policies, and enabling all men and women to achieve sustainable livelihoods". This could be by way of "Freely chosen employment and work" (UN 1995). Unemployment is constructed clearly as a major source of poverty among other constraints. Public spending programmes which tend to deviate its focus from the important areas of unemployment are certainly not addressing the unemployment crisis, for unemployment anywhere is a threat to livelihood everywhere. The hazards of unemployment are common and call for immediate solution as no responsible government can neglect the problems of unemployment.

From the earliest of times, economists have popularized a number of economic models aimed at explaining the causes of unemployment. These models have been targeted at, and or derived from the socio-economic and institutional circumstance of the developed countries. Thus in economic and management literature, Briggs (1973) views unemployment as the difference between the amount of labour employed at current wage levels and working conditions and the amount of labour not hired at these levels. The classical economist and the Keynesians view unemployment from different perspectives. The classical economist hold on to the existence of full employment in the economy. Put simply, there is no possibility of involuntary unemployment in the sense that people are prepared to work but they do not find the work. This is to say that nearly all unemployment are voluntary excepting the unskilled who are unemployed because they are hindered by minimum wage legislation which prevents employers from hiring these categories of workers (Taylor 1995). From this dimension there is no possibility of experiencing deficiency in aggregated demand. Jhingan (2003) opines that it is abnormal to experience deviation from full employment. The Keynesians reason that full employment cant be achieved due to rigidities in wages. Unemployment is therefore viewed as being involuntary and this occurs when people lack jobs but are willing and ready to work at wages commensurate with their skills. Full employment is consistent with frictional and voluntary unemployment. If aggregated demand is increased through direct increase in government (public), expenditure or by government policies that encourage more private investment directly or indirectly unemployment can be eradicated. This establishes the functional relationship between unemployment, public expenditure, government expenditure on employment, gross domestic investment, inflation, exchange rate, capacity utilization and labour force. Unemployment represents that part of labour force that cannot find jobs to do but are able and willing to offer themselves for employment. Thus the implications vis-à-vis attainment of a realistic value of the naira are also related with high unemployment and inflation. Therefore unemployment has been on the increase as a result of the expenditure activities of government and instability in the economy.

Unemployment could be determined by labour force, aggregate investment and government expenditure. In economic literature, it is expected that increase in government spending should lead to decrease in unemployment. This is because the increase in spending leads to increase in production of goods and services which in turn requires and necessitates the employment of labour for the generation of the desired output.

Macroeconomic goals of government include reduction in the level of unemployment among others. Achieving this objective provides a unique dilemma in respect of the extent to which unemployment is tackled in Nigeria in line with the world summit declaration for social development which attaches importance to promoting the goal of full employment as a basic priority of socio-economic policies and sustainable livelihood.

Mathematically, unemployment rate could be determined simply by:

$$UR = \frac{UP}{LP} X 100$$

Where:

UR = Unemployment
UP = numbers of unemployed persons
LF = Total labour force.

Irrespective of how a nation views unemployment, the underlying philosophy is that unemployment has caused great concern not only to policy-makers but the general public also. Several theories have been adopted by economist to explain the types and or phenomenon of unemployment in an economy.

Exchange rate is the rate at which one currency is exchanged for another. It is the price of one currency in terms of another currency. It measures the worth of a domestic economy in terms of another, most especially in relation to leading partners' economies, notably the currencies of industrialized countries comprising the United state Dollars, British Pound sterling, German Deutsche Mark, Japanese Yen, French France, Italian Lira and the Canadian Dollar. Ogun (1998) reasons that since real exchange rate is the price of foreign goods in terms of domestic good, exchange rate fluctuation refers to the volatility of real movement of real exchange rate (RER). Fluctuation refers to the volatility of real exchange rate vis-à-vis the long term patterns and trends (Frankee and Godstein 1988). Variations (fluctuations) or risk in international commodity trade normally spring from dual sources. These are fluctuations in normal exchange rate and variations in world prices. These jointly determine the domestic trade price of a commodity over a period of time.

From the earliest of times, the exchange rate management (or stability) is expected to achieve the objectives of price stability, sustainable economic development, reduction of unemployment and balance of payment viability most especially when applied in collaboration with other macroeconomic policies. Stable exchange rate aids achievement of these macroeconomic goals. The converse also holds. The exchange rate has to be right since it is a significant price that affects other prices. This explains in part, why policy makers stress the notion of a "realistic exchange rate". Nigeria had minimal exchange rate misalignment problems before the 1980s. Exchange rate in Nigeria and other countries have been fluctuating with the emergence of flexible exchange rates beginning from 1980s. The pattern and trend has reflected an increase in the rate of foreign exchange. This reveals sharp appreciation of the exchange rate.

Exchange rate movement impacts on output and employment. Depreciation, it is often believed serves as a stimulant to economic activities. This is a result of the initial increase in the price of foreign commodities vis-à-vis home goods. This equally leads to price increases in domestic output and domestic prices. Appreciation could result in a contractionary effect on the economy. Besides, volatility of exchange rates has implications on the overall success of government stabilization policies. Appreciation is believed to be responsible for increase in unemployment. Government then should intervene in the foreign exchange markets so as to stabilize the currency and protect employment and output against the adverse implications created by exchange rate instability. Changes in the exchange rate greatly affect the profitability and performance for the manufacturing industries (Gampa and Goldberg 1997).

The exchange rate between countries are influenced by the forces of demand and supply in the foreign exchange market. Factors responsible for changes and or instability in the demand and supply of foreign exchange include but are not restricted to: Changes in Prices, changes in Interest Rates, Changes in Export and Import, Capital Movement and Influence of Banks. Others are Influence of Speculation. Speculation causes short-run fluctuations in exchange rate. Political conditions, policies of exchange control and protection and type of economic system equally form other causes in the exchange rate.

The combination of demand and supply side channels show that real output depends on unanticipated movements in the exchange rate, government spending, money supply and energy price. Additionally, supply side channels establish that output changes in line with anticipated changes in the exchange rate and energy price. Aggregate demand increases as a result of unexpected increase in government expenditure or money supply.

The impact of real exchange rate instability on the price level and output are complicated as a result of demand and supply channels. Put differently, the implications are associated with the fact that unexpected appreciation of currency makes exports more expensive and import cheaper in the goods markets. Change in the exchange rate, both anticipated and unanticipated lead to a determination of the cost of importing intermediate goods. Producers are inclined to increase imports of intermediate goods as dollars appreciates from the standpoint of money market. An unexpected temporary increase in the value of the currency vis-à-vis anticipated value in the future prompts economic agents to hold less currency and decrease interest rate.

Furthermore it is pertinent to note that exchange rate has been a very significant policy tool in different economies. It has served as a nominal anchor in the stabilization of domestic economic systems and reducing inflation rate as well as tackling the problem of unemployment. Foreign exchange management has been a meaningful element in starting off external imbalances.

ANALYTICAL METHODOLOGY

The objective of this study is to examine the implications of exchange rate movement on unemployment in Nigeria. The ordinary least square (OLS) is used to determine the equation. The OLS is used to eschew bias as well as obtain the exact linkage (association) of values measured. The equation is logged because the log-linear form permits a direct estimation and interpretation of the coefficient of the model.

SOURCES OF DATA

This study covers the period 1970-2005. The data used are mainly secondary data which were sourced from the central bank of Nigeria statistical Bulletin and Central Bank of Nigeria bullion, Federal Office of Statistics (FOS), Publications of IMF and World Bank Development Report. Exchange rate instability is measured by three years moving average of standard deviation of the real exchange rate.

UNEMPLOYMENT EQUATION

The selected macroeconomic variables in relation to unemployment and exchange rate can be expressed thus:

$Y = f(X_1, X_2, X_3, X_4)$ - - - (I)

Where:

Y is unemployment

X_1 to X_4 are the macroeconomic variables

f represents functional notation

Estimation model for unemployment is as follows:

UNEM = (EXCHR, INFLA, GDI, CUT) - - - - - - (II)

Econometrically, the above equation can be modeled thus:

$UNEM = a_0 + a_1\ LEXCHR + a_2\ LINFLA + a_3\ LGDI\ e_t$ - - - - (III)

Where:

e_t = Error /Stochastic Term
$a_0 - a_4$ = are parameter Estimates
LUNEM = Unemployment
LEXCHR = Log of exchange Rate
LINFLA = Log of Inflation
LGDI = Log of Gross domestic Investment
LCUT = Log of capacity utilization

DATA ANALYSIS AND DISCUSSION OF RESULT

The empirical data on which the analysis of this paper is based are presented in table 1 below. This table presents data for estimating the model for unemployment. Unemployment figures for the period under study are presented in column 2 while figures for exchange rate and inflation are presented in column 3 and 4 respectively. Columns 5 and 6 present the figures for capacity utilization and labour force while gross domestic investment and government expenditure on unemployment are recorded in columns 7 and 8 respectively.

TABLE1: UNEMPLOYMENT EQUATION
UNEM = f (EXCHR, INFLA, GDI, CUT)

	UNEM = F EXCHR, IFLA, GDI, CUT						
YEAR	UNEM	EXCHR	INFLA	CUT	LAB	GDI	GOVEM
1970	12250	0.7142	13.8	77.1	14784	1003.2	140.4
1971	12685	0.6955	15.6	77.2	14784	1322.8	46.0
1972	13573	0.6579	3.2	77.1	17104	1571.1	498.3
1973	15497	0.6579	5.4	77.1	52748	1763.7	454.3
1974	20918	0.6299	13.4	77.5	33963	1812.1	555.4
1975	23418	0.159	33.9	76.6	67565	2287.5	1055.4
1976	21026	0.6265	21.2	77.4	107487	2339.0	1010.2
1977	14834	0.6466	15.6	78.7	52242	2531.4	1040.4
1978	18796	0.606	16.6	71.5	59270	2863.2	1331.2
1979	18219	0.5757	11.8	71.5	105525	3153.1	999.5
1980	256623	0.5464	9.9	70.1	204742	3620.1	1917.4
1981	188434	0.61	20.9	73.3	221088	3757.9	2175.1
1982	106496	0.6729	7.7	63.1	323700	5382.8	2082.1
1983	112588	0.7241	23.2	49.1	2874721	5949.5	2567.9
1984	123495	0.7649	39.6	42	629177	6418.3	2677.3
1985	100745	0.5938	5.5	37.1	42046	6804.0	2638.2
1986	912813	2.0206	5.4	38.9	157165	9313.6	2675.7
1987	160184	4.0179	10.2	40.4	57097	9993.6	6046.3
1988	132455	4.5367	38.3	41.5	55620	11339.2	5777.8
1989	110336	7.3916	40.9	42.4	157342	10899.6	6270.5
1990	99934	8.0378	7.5	40.3	254540	1036.1	6540.2
1991	123137	0.9095	13.0	38.1	460471	12243.5	6953.8
1992	97349	17.2984	44.5	38.1	238324	20512.7	8854.5
1993	183540	22.0511	54.2	35.0	880224	66787.0	18366.1
1994	100400	21.8861	57.0	30.4	1541146	70714.6	20534.8
1995	114672	84.575	72.8	29.1	193944	119391.6	20757.9
1996	152693	79.6	29.3	32.5	19826	122600.9	47122.8
1997	152293	74.625	8.5	37.2	59897	128331.9	61333.1

1998	184103	84.3679	10.0	32.4	9494	152410.9	54673.5
1999	149693	92.5284	6.6	35.9	173858	154190.4	97224.1
2000	190328	-109.55	6.9	36.1	344722	157536.8	121299.1
2001	170287	112.4864	18.9	39.6	259290	160892.3	180810.0
2002	180311	126.4	12.9	44.4	302006	166631.6	331736.0
2003	180309	135.4067	14.0	44.4	334748	178478.6	307848.5

Source: world Bank Development Report (2005), CBN (2004) Central Bank of Nigeria statistical bulletin, CBN (2005) central Bank of Nigeria Major Economic, financial and banking Indications

UNEM = Unemployment
EXCHR = Exchange Rate
LAB = Labour Force
GDI = Gross Domestic Investment
GOVEM = Government Expenditure on employment
CUT = capacity utilization

TABLE 2: Unemployment Equation

Dependent Variable: LUNEM
Current Sample: 1970 - 2003
Number of Observations: 34

VARIABLES	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC	P-VALUE
C	15.5529	3.98060	3.99018	[.001]
Δ LEXCHR	-.179243	.171230	-1.04680	[.304]
ΔINFLA	-.014780	.826302E-02	1.78871	[.084]
Δ LGDI	.2890.34	.181993	1.58816	[.123]
Δ LCUT	-1.69249	.745011	-2.271777	[.031]
$\bar{R}^2$ = 0.445441	F-Statistic = 7.62668		Dw = 1.2158.	

From the result in table 2 above, the following facts emerge. The regression equation for unemployment is presented and the regression result is as shown in table 2. The equation has exchange rate, inflation, gross domestic investment and capacity utilization as explanatory variables-independent variables. The coefficient of the constant term is 15.5529, which is positive and statistically significant at 0.1 per cent. Exchange rate does not have a positive relationship with unemployment and so unemployment seem not to be affected by exchange rate instability in economy. The exchange rate in this equation assumes a negative sign implying the inverse relationship between exchange rate and unemployment. An increase in exchange rate reduces unemployment. The t-value is statistically insignificant. Inflation assumes a negative sign indicating the inverse relationship between inflation and unemployment. An increase in inflationary rate, decreases the rate of unemployment. This contradicts the work of Aktar and Hilton (1984) on exchange rate uncertainty and international trade. The t-value is however statistically insignificant at 8.4 per cent. Gross domestic investment carries a positive sign. This indicates the positive relationship between gross domestic investment and unemployment. Thus an increase in gross domestic investment leads to subsequent increase in unemployment. This moves in concert with the articulations of Enyel and Halkkio (1992) on exchange rate regime and volatility, since unemployment equally covers unskilled and semi-skilled people being without remunerated jobs but available to work. The t-value is statistically significant. Capacity utilization carries a negative sign showing the inverse relationship between capacity utilization and unemployment. The t-value is statistically significant at 3.1 per cent. The adjusted R^2 is 0.445441. This implies a fairly satisfactory fit for the model and its explanatory power. The variables in the model explain up to about 45 per cent of the variations in unemployment. DW of 1.2158 indicates the absence of spurious regression as this is greater than the adjusted R^2. Most of the parameters were statistically significant as revealed by the P-values corresponding to the estimated parameters.

POLICY RECOMMENDATION AND CONCLUDING REMARKS

This study reveals that there is a linkage between unemployment and exchange rate instability vis-à-vis inflation, gross domestic investment and capacity utilization. The econometric model developed is greatly relevant as it has predictive power for the explanation of the linkage. Thus, there is a linkage between unemployment, exchange rate, inflation, capacity utilization and gross domestic investment in the Nigerian macroeconomic environment. The linkage between unemployment and exchange rate in relation to capacity utilization, gross domestic investment is of great importance as increases in capacity utilization results in reduction of unemployment. This in turn reduces the rate of poverty in the economy. The t-value is statistically significant. The result of the study records a fairly good fit for the model and its explanatory power. The variable in the model explains up to about 45 per cent of the variables in unemployment. With the DW greater than the adjusted R^2, it is indicative that there is the absence of spurious regression. The result of the model has useful policy implications. This study maintains that since capacity utilization among other variables has strong relationship with exchange rate instability vis-à-vis unemployment, it is recommended that more foreign exchange be appropriated for capacity building an utilization so as to maximize the gains of greater productivity. Summarily, unemployment is a major macroeconomic variable and also a macroeconomic indicator that determines the instability of exchange rate on unemployment.

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