



Capital Flight and Unemployment Rate in Nigeria

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/SAJSSE/2021/v12i430322

Editor(s):

(1) Dr. John M. Polimeni, Albany College of Pharmacy and Health Sciences, USA.

Reviewers:

(1) Marcel Pikhart, University of Hradec Kralove, Czechia.

(2) Imam Mukhlis, Universitas Negeri Malang, Indonesia.

(3) Eliza Nor, Universiti Sains Malaysia, Malaysia.

Complete Peer review History, details of the editor(s), Reviewers and additional Reviewers are available here:
<https://www.sdiarticle5.com/review-history/77532>

Original Research Article

Received 13 September 2021
Accepted 26 November 2021
Published 30 November 2021

ABSTRACT

This study examined Capital Flight and unemployment rate in Nigeria. Capital flight was proxied by foreign direct investment abroad, external debt servicing, external reserves and capital and financial account deficits. Based on study objectives, relevant literatures were reviewed and evaluated. Relevant data were extracted from the annual Statistical Bulletin of the Central Bank of Nigeria and the National Bureau of Statistics. Unit root test was conducted using Augmented Dickey Fuller method which revealed that the variables were integrated at level and first difference necessitating the use of autoregressive distributive lag/bond test to explore the long run relationship existing among the variables in the model and the result showed that the variables in the model were co-integrated thus we proceeded in evaluating the long run as well as the co-integrating form in the model. From the result of the various tests, it was revealed capital flight did not actually increase unemployment rate in Nigeria within the periods studied by the researchers. Based on the findings from the analysis, the study recommended amongst others, that external debt acquired should be judiciously used for infrastructural development that would encourage investments which would ultimately bring about economic growth as well as enhance human development in Nigeria.

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Keywords: Capital flight; unemployment rate; foreign direct investment abroad; external debt servicing; external reserves; capital and financial account deficits.

1. INTRODUCTION

1.1 Overview

The economic growth and development of any country is directly tied to the extent of economic activities engaged in by the various active sectors of the economy, as well as the level of financial resources available to effectively consummate economic transactions that are capable of impacting directly on the major macroeconomic indicators of such an economy, which will in turn bring about sustained economic growth and development [1]. Numerous developing nations across the globe including those countries within Sub-Saharan Africa, have overtime, suffered various situations of financial losses which have manifested as a result of the indiscriminate movement of investable financial resources from these developing countries, to other countries that are most often developed, this experience has been counterproductive to these developing nations and the economic growth and development of such countries have been seriously jeopardized [2].

The challenges of capital flight has been a major concern for policy makers especially in the less developed and developing nations to which Nigeria belongs, as there is a persistent issue of inadequate supply of financial capital considered necessary for sustained economic growth and development [3]. Olatunji and Aloye [4] posit that economic resources lost through the medium of outflows of resident capital do not contribute to the increase of domestic activities into the enhancement of social welfare of residents. There has been increasing attention to the notion of capital flight; many analysts' have attributed sluggish economic growth and persistent balance of payment deficits in most developing countries to capital flight [5]. In addition, capital flight has adverse consequences for developing countries. First, the loss of capital through capital flight erodes the domestic tax base and therefore affects income redistribution. Secondly, it reduces a bank's ability to create money for investment projects. Most importantly, capital flight contributes to the distribution of income from the poor to the rich, [6].

Capital flight is seen therefore to have taken various forms, including false bottom suitcases stocked with cash or travellers cheques

(currency smuggling), trade taking (over invoicing of imports and under invoicing of exports). Electronic fund transfers from private banking services, declaring of un-existing foreign debts and commission and agents' fee. Other components of capital flight include overseas investment, emanating from illegal activities like drug trafficking, corruption, illicit activities particularly those related to tax evasion and exchange rates controls [3].

1.2 Statement of the Problem

Over the years, there has been an increasing concern for capital flight in Nigeria in relation to the nation's economy, and general research works have been carried out on this problem. At the same time the prospect for solving this problem remain grim. Poor level of capital inflows reduces the level of economic growth and would be said to be a disincentive to economic development in any economy, High level of capital inflows encourages capital formation, which is very essential for economic growth and development, which in turn, enhances substantial level of investment and encourages high level of returns. When there is capital outflow, it is money that is "fleeing" from the country.

The problem of capital flight has become even more severe today as attention has shifted in favour of a mono-cultural economy based on oil. Thus in spite of several government efforts in attracting foreign capital inflows, these inflows have not played its expected role in economic transformation in particular and economic growth and development of the nation in general. Also, there are numerous empirical studies with conflicting claims concerning the effect of capital flight on the economy of a country, while some researchers argue that capital flight has a negative impact on the economy [7], (Olugbenga & Alamu, 2013); [8,9], others had maintained an opposite view arguing that capital flight do not impact negatively on an economy [5,10,11], thus the researchers here seem to be caught in the web of confusion concerning which group to agree with. It is against this backdrop that this study was conducted to find out the effects of capital flight on Unemployment in Nigerian.

1.3 Aim and Objectives of the Study

The overall aim of this research was to critically examine the impact of capital flight on

Unemployment in Nigerian. The specific objectives included to;

1. analyze the effects of foreign direct investment abroad on Unemployment in Nigerian;
2. assess the effect of external reserves on Unemployment in Nigerian;
3. examine the effects of external debt servicing on Unemployment in Nigerian; and
4. to evaluate the effects of deficits on capital and financial account on Unemployment in Nigeria.

2. SYNOPSIS OF THEORETICAL, CONCEPTUAL AND EMPIRICAL LITERATURE

2.1 Theoretical Framework

This study was anchored specifically on two relevant theories, these include;

The Investment Diversion Theory: This theory postulates that due to the macroeconomic and political uncertainty in developing country and the simultaneous existence of better investment opportunities in advanced countries like high foreign interest rate, wide array of financial instruments, political and economic stability, favourable tax climate and secrecy of accounts. Some, unscrupulous, corrupt leaders and bureaucrats usually siphon scarce capital resources from their countries to advanced countries. These funds are therefore, not available for investment at home leading to decline in aggregate investment, low economic growth, hence declining the employment, increase in dependency ratio and high death rate. These negative macroeconomic effects on these countries sometimes motivate the necessity to borrow from abroad to reactivate the domestic economy, which is sometimes further siphon thereby perpetrating external dependency and indebtedness. The liquidity constraint or crowding – out effect may result to depreciation of the domestic currency if the authorities are operating a floating exchange rate system [12]. An attempt to defend the exchange rate at this time leads to loss of international reserves. The investment diversion thesis provides one of the well-known negative consequences of capital flight in the countries involved.

The Debt Driven Capital Flight Thesis: This is the continuation of the investment diversion

thesis. This thesis postulates that given the heavy external debt of a country, residents of these countries are motivated to move their resources outside the country to foreign countries. Borrowed money is sold to domestic economic agents who transfer these funds partly or completely abroad. According to this thesis, external debt is one of the propellants or fuel to capital flight. The debt-driven thesis also called debt overhang thesis states that capital flight reduces the incentive to save and invest. The assumption here is that with large foreign debt, there are the expectations of exchange rate devaluation, fiscal crisis, and the propensity of the crowding out of domestic capital and expropriation of assets to pay for the debt. The debt driven thesis and the investment driven thesis taken together suggest interdependency between capital flight, growth and external debt with the linkages being mutually reinforcing. Capital flight leads to poor growth, which calls for the necessity to borrow in order to promote growth. Further borrowing or indebtedness promotes capital flight, which in turns leads to poor economic growth, and the cycle continues.

2.2 Conceptual Framework

2.2.1 Concept of capital flight

Capital flight is a rather slippery concept: Several interpretations have been given of what exactly is meant by the term. Usually, capital flight is related to the existence of high uncertainty and risk with respect to returns on domestically held assets. Residents take their money and run in order to avoid extremely high-expected losses on their asset holdings. It is sometimes argued that capital outflows based on this consideration should be viewed as abnormal, and should therefore be distinguished from normal capital outflows, since normal outflows are based on considerations of portfolio diversification of residents, and/or activities of domestic commercial banks aiming at acquiring or extending foreign deposit holdings [5]. Yet, when measuring capital flight it appears to be very difficult to empirically distinguish between normal and abnormal capital outflows.

Therefore, as no surprise that several different capital flight measures are available in the existing literature inevitably; these measures lead to differences in capital flight estimates. However, the following three main methods of measuring capital flight can be distinguished in the literature. First, several studies have

measured capital flight indirectly from balance of payments statistics by comparing the sources of capital inflows (Net increases in external debt and the net inflow of foreign investment) with the use of these inflows (the current account deficit and additions to foreign reserves).

Second, some authors measure capital flight by adding up net errors and omissions and non-bank private short-term capital outflows [13]. This measure reflects the idea that capital flight goes unrecorded, due to the illegal nature of these capital movements. It is argued that the unrecorded capital movements appear in the net errors and omissions. Moreover, by concentrating on short-term flows, medium and long-term outflows are excluded, which according to the author are more normal in character [14].

Third, the capital flight measure proposed by Dooley [15] also aims at measuring abnormal or illegal capital outflows. Dooley defines capital flight as all capital outflows based on the desire to place assets beyond the control of domestic authorities, excluding normal outflows. Consequently, this measure includes all capital outflows that do not receive and/or register interest payments. However, Sheets [16] shows that the calculation of capital flight as proposed by Dooley [15] is partly based on the residual approach, although he uses a different concept of capital flight. Therefore, the Dooley method gives rather identical magnitudes of capital flight as compared to those for the residual method.

2.2.2 Dimensions of capital flight

Foreign Direct Investment (Abroad): Foreign Direct Investments is defined as a cross-border investment in which a resident in one economy (the direct investor) acquires a lasting interest in an enterprise in another economy (the direct investment enterprise). The lasting interest implies a long-term relationship between the direct investor and the direct investment enterprise and usually gives the direct investor an effective voice, or the potential for an effective voice, in the management of the direct investment enterprise. By convention, a direct investment is established when the direct investor has acquired 10 per cent or more of the ordinary shares or voting power of an enterprise abroad [17]. A foreign entity that engages in foreign direct investments will have a substantial amount of control over the company or operations into which the investment is made. The lasting interest in a direct investment

enterprise typically involves the establishment of manufacturing facilities, bank premises, warehouses, and other permanent or long-term organizations abroad.

Nevertheless, foreign investments do not come devoid of some negative aspects. There is normally the tendency for over utilization of the available natural resources, as the companies strive to maximize profits in their venture [18]. The 'tragedy of the commons' whereby many organizations compete to utilize a shared resource leads to degradation of natural resources as well as environmental pollution, which have largely been associated with the issue of climate change [19], importation of capital intensive and out-dated technology, Exploitation of local labour, Increase in local wage cost through payment of high wages by multinational corporations affiliates, contribution to economic leakage (and deterioration of balance of payments) through preference of imported inputs to local ones, Lack of linkages with local communities, that is, development of 'enclaves', Adverse effects on competition in the national market, Use of transfer prices to escape local taxes and to cheat local partners on returns, encouragement of corruption, pollution of the environment, especially in extractive and heavy industries, social disruptions associated with accelerated commercialization and creation of tastes for expensive foreign consumer goods and political dependency on foreign direct investments source countries and, therefore, loss of sovereignty [17]. In the Nigerian context, foreign direct investment could be expressed as FDI local which defines foreign direct investment coming into the country, and FDI abroad representing foreign direct investment going out of Nigeria. In this study, the researchers will be interested in foreign direct investment abroad.

External Reserves: External reserve can also be called foreign reserve or international reserve and it is defined according to IMF as consisting of official public sector foreign assets that are readily available to, and controlled by the monetary authorities, for direct financing of payment imbalances, and directly regulating the magnitude of such imbalances, through intervention in the exchange markets to affect the currency exchange rate and/or for other purpose [20]. The mandate of managing the reserve is bestowed on the central bank of each country.

The recent trend of accumulation of external reserve was as a result of the Asian financial

crises of the 1990's. This marked the beginning of the era of financial globalization [21]. The crises instigated the Asian countries to increase their external reserves as a result of precautionary demand, reflecting the desire for self-insurance against sudden restrictions in their ability to borrow funds from other countries [22]. It is also noted that the bulk of the foreign exchange reserves accumulation in Asian can be attributed to an optimal insurance model that serves as a steady source of liquidity to mitigate the impact of a sudden stop in capital flows (Islam, 2009).

External Debt: Economic growth and development is a major goal of most developing countries; hence resources are mobilized from various sources including external borrowing for investment into viable projects for growth acceleration. Sustainable economic growth is a predominant concern for all countries, especially developing economies that frequently face burgeoning fiscal deficits mainly driven by higher levels of debt service, particularly external debt servicing and widening current account deficits [23]. According to Atique and Malik [24], external debt constitutes a greater share of the public debt structure in developing countries. Reliance on external borrowing is not only rationalized on the grounds that excessive domestic borrowing can lead to financial instability and crowd out the private sector [25] but also, as argued by Todaro and Smith [26], developing countries in their early stages of development need to borrow externally because of inadequate domestic capital for investment.

The external debt levels of Sub-Saharan African countries have been on the rise in the past two decades, generating concerns among analysts and policy-makers about a looming debt distress threatening the region. Despite recent tightening of concessionary terms associated with bilateral and multilateral loans, Sub-Saharan Africa countries to which Nigeria belongs still continue to rely heavily on external borrowing for fiscal sustainability in order to accelerate economic growth. The impacts of the global economic downturn in the 1980s on developing economies, including the debt crisis, were such that the 1980s is often referred to as the "lost decade" for Africa [27].

The causality between external debt and capital flight has many facets, though all the possible relationships results in capital flight. Ajayi [28] and Boyce [29] distinguish four possible linkages

between the two: debt-driven capital flight, debt-fuelled capital flight, flight-driven external borrowing and flight fuelled external borrowing. Beja [30] analysed the relationship between the two using what he termed 'revolving door model'. Beja's model posits direct and indirect linkages between external debt and capital flight. One of the linkages posits a direct causal effect, whereby external debt provides the fuel and/or motivation for capital flight, and vice versa. Thus, external borrowings are transformed sometimes instantaneously from capital inflow to capital flight, ultimately ending up abroad, usually in a private foreign account.

Capital and Financial Account: The Capital Account registers the acquisitions or disposal of non-financial and non-produced assets [31]. This includes the exploitation of natural resources, such as mineral, forest, or airspace. Notice that to be registered on the capital account, there should be a change in the ownership of the right to exploit. If the use is temporary, the registration is made on the secondary income account of the current account. Also registered on the capital account are marketing assets transactions, such as brand names, trademarks, and contracts that give exclusive rights over future goods and services, such as the amount paid by a foreign soccer club for a player.

The offsetting financial account is named the *Financial Account* (formerly called Capital Account). Large current account deficits imply large financial account surpluses. The financial account transactions are recorded below the current account items in the balance of payments. Some financial account transactions are a direct result of trade in merchandise and services. For instance, many goods are sold using trade credit. The exporter allows the importer a period of time—typically 30, 60, or 90 days—before payment is due. This sort of financing will generally be reflected in other investment assets, because such transactions are handled by the exporter's bank. Portfolio management by international investors would result in changes to the portfolio investment account [32]. Official transactions involve governments and are motivated by a host of economic and political considerations.

2.2.3 Unemployment

According to Salami [33], unemployment or joblessness, as defined by the International Labour Organization [34] occurs when people

are without jobs and they have actively sought work within the past five weeks. The unemployment rate is a measure of the prevalence of unemployment and it is calculated as a percentage by dividing the number of unemployed individuals by all individuals currently in the labour force. The Newsweek [35] reported that more than 200 million people globally are out of work, a record high, as almost two-thirds of advanced economies and half of developing countries are experiencing a slowdown in employment growth.

Dependence on jobs to make money to buy food and shelter was the beginning of unemployment [36]. Because it has not always been acknowledged or measured systematically, there are limited historical records on unemployment [37].

Recognition of unemployment occurred slowly as economies across the world industrialized and bureaucratized. The recognition of the concept of "Unemployment" is best exemplified through the well documented historical records in England [38]. For example, in 16th century England no distinction was made between vagrants and the jobless as they were simply categorized as "sturdy beggars", to be punished and moved on [39]. An individual who cannot either join an enterprise or create a job is unemployed. As individual farmers, merchants, and artisans organize themselves into large enterprises, those who cannot join or compete favourably become unemployed [40].

As population was rising, those unable to find work had a choice: starve or break the law. Youth unemployment across the world has been climbing over the last two decades. The youth population in sub-Saharan Africa was estimated at 138 million people in 2002-2003, with 28.9 million or 21% of them unemployed [41]. Youth unemployment differs with regard to gender, age, skill, and educational qualifications. According to ILO [42], the unemployment rate for young women in sub-Saharan Africa is 18.4%, lower than the rate for young men (23.1%) even though young women's participation rate is lower.

Youth unemployment in Africa also has a geographical dimension. It is generally higher in the urban areas than in rural areas [43]. Several factors account for higher youth unemployment rate in Africa, most notably low economic growth, low economic activity and low investment [44]. These related factors contribute to low job

creation and because of sustained (increase in some cases) population growth the small labour market is unable to absorb the resulting army of job seekers [45].

Salami [33] acknowledged that youth unemployment has been increasing because most graduates lack relevant marketable skills. The Federal government at one point acknowledged that about 80 percent of Nigeria's youth are unemployed while 10 percent are underemployed [46]. According to the National Bureau of statistics [47] the national unemployment rates for Nigeria between 2000 and 2009 showed that unemployed persons constituted 31.1% in 2000, 13.6% in 2001, 12.6% in 2002, 13.4% in 2004, 13.7% in 2006, 14.9% in 2008, and 19.7% in 2009. With respect to age group, education and sex NBS [47], data showed that persons aged between 15 and 24 years had 41.6% unemployed. For persons between 25 and 44 years, 17% were unemployed. For persons with primary education 14.8% were unemployed while those with post-secondary education had 21.3% unemployed [48]. As regards sex, data showed that males constituted 17% of the unemployed while females constituted 23.3% [49].

It is clear that unemployment negatively affects economic growth and development. This is because less number of youths contributes to the development of the economy. They only serve as leakages to the economy and this is one of the major problems facing the economic development of any nation.

2.3 Empirical Review

Makwe and Oboro [50], examined capital flight and economic growth in Nigeria between 1990 and 2017, using ordinary least square analysis, augmented dickey fuller test, granger causality test and co-integration test. The study revealed that net foreign investment abroad, external debt servicing and external reserves being proxies for capital flight; all have an impact on economic growth proxied by gross domestic product.

Anetor [51], carried out a study on macroeconomic determinants of capital flight; evidence from the sub-Saharan African countries between the periods 1981-2015; the data for the study were obtained from the World Bank development indicators (WDI), and the autoregressive distributed lag (ARDL) model techniques was used to determine the

macroeconomic factors influencing capital flight from the sub-Saharan African region. The results of the study showed that economic growth had a significant negative relationship with capital flight in both the long run and short run.

Bredino, Fiderikuma and Adesuji [52], studied the impact of capital flight on economic growth in Nigeria using an econometric approach over the period 1980 to 2012 using the Ordinary Least Square (OLS) and co-integration/error correction methods of analysis. The research findings showed that capital flight have adverse impact on the cross domestic product, while exchange rate impacts positively on GDP in Nigeria.

Salandy and Henry [53], examined the determinants of capital flight from Trinidad and Tobago between 1971 and 2011. Using the OLS and the Generalized Method of Moments (GMM) techniques of estimation, the study noted that the major causes of capital flight include the lagged external debt, lagged capital flight, external debt, GDP growth, interest rate differential, and excess liquidity.

Anaya, Hachula and Offermanns [54], used a structural global VAR model to analyse the impact of US unconventional monetary policy shock as defined by changes in the central balance sheet. It was on the financial and economic conditions of emerging market economies. It also investigated whether or not international capital flight flows were an important channel of shock transmission. They observed that an expansionary policy significantly increased portfolio flows from the US to emerging economies for the periods studied. This was accompanied by a persistence movement in real and financial variables in the receiving emerging economies.

Auzairy et al. [1], investigated the dynamic relationship between capital flight and macroeconomic fundamentals in Malaysia between 1992 and 2012. Using co-integration and vector auto-regression methods of estimation, the study noted that Consumer Price Index (CPI), GDP, interest rate and exchange rate constitute the macroeconomic fundamentals determining capital flight.

Gunter [11], examined the impact of corruption and family effects on capital flight in economic growth of nexus in China based on data from 1984 to 2014. The research used both the Cuddington's balance of payments and residual

measures to investigate this relationship by adjusting and reflecting the legitimate assets of the Chinese banking industry, miss-invoicing of China's trade with its major trading partners, exchange rates, and the weakness of the official debt data among others. The research observed that capital control had little or no long term impact on the volume of capital especially the capital flight route in Hong Kong. The research also observed that corruption, transaction costs, migration facilitation process were the prime driver of capital flight from mainland China.

Aderoju [55], studied an empirical investigation of capital flight and domestic investment in Nigeria between 1980 to 2015. The study made use of secondary data from CNB statistical bulletin of various issues and the National Bureau of Statistics. The Augmented Dickey Fuller test, Philip-Perron test, Johansen Co-integration test and Ordinary Least Square estimating technique (OLS) were employed to carry out a detailed analysis of the endogenous and exogenous variables of the model. The overall results showed that capital flight has a statistically significant positive relationship with gross domestic investment in Nigeria. The result also showed that there exist a statistically significant positive relationship between exchange rate and gross domestic investment.

Lawal, Kazi, Adeoti, Osuma, Akinmulegun and Ilo [8], carried out a study on capital flight and economic growth, evidence from Nigeria using the Autoregressive Distributed Lag (ARDL) model to analyse data source from the period of 1981 to 2015. The variable used include, current account balance, capital flight, foreign direct investments, foreign reserve, inflation rate, external debt and real gross domestic product. The result indicated that capital flight has a negative impact on the economic growth of Nigeria.

Uddin, Yousuf and Islam [9], carried an econometric analysis of the determinants of capital flight in Bangladesh between 1973 and 2013. They used OLS and noted that the major causes of capital flight are foreign direct investment flows, external debt, interest rate differentials, foreign reserves, and current account surplus. The study also concluded that there is a strong positive correlation between interest rate differential and capital flight and between change in external debt and capital flight.

Adedayo and Ayodele [10], conducted an empirical analysis of the impact of capital flight on Nigeria economy using secondary data covering the period 1980 to 2014. The Ordinary Least Square (OLS), Augmented Dickey-Fuller unit root test and Co-integration tests were adopted to carry out an extensive analysis of the adopted variables which include Gross Domestic Product, capital flight and exchange rate. The result revealed that the variables have a significant effect in the positive direction. The implication is that as capital flight inflow increases into the economy, it in turn increases the exchange rate causing a positive influence on the Nigerian economy.

Efobi and Asongu [56], from a panel of 29 African economies analysed the effects of terrorism on the capital flight based on data from 1987 to 2008 using the Generalized Method Moment (GMM) with Forward Orthogonal Deviations (FOD) and Quantile regression (QR). In the results, GMM showed that domestic, transnational unclear and total terrorism consistently increased capital flight. Meanwhile, QR showed that except transnational terrorism which showed the positive effect on capital flight at about 0,90th quintile, terrorism dynamics affected capital flight in low quintiles of the capital flight distribution.

Liew, Mansor and Puah [57], carried out an empirical investigation on the macroeconomic causes of capital flight in the Malaysian economy between the period 1980-2010. Using the autoregressive distributed lag (ARDL) model, the study found that political risk and financial crisis positively and significantly influence capital flight in the long-run.

2.4 Research Hypotheses

The following hypotheses guided the researchers in this study:

H₀₁: There is a significant relationship between foreign direct investment abroad and unemployment rate in Nigeria.

H₀₂: There is a significant relationship between external reserves and unemployment rate in Nigeria.

H₀₃: There is a significant relationship between external debt servicing and unemployment rate in Nigeria.

H₀₄: There is a significant relationship between capital and financial account deficits and unemployment rate in Nigeria.

3. METHODOLOGY

The study adopted the *ex-post facto* design. This is adopted because the data for this study was based on the use of the time series data. This design was also adopted because the study aimed at exploring the effect of the proxies for capital flight on unemployment rate. Nwankwo [58] has it that the ex-post factor analysis allows for the evaluation of the effect of independent variable(s) on a dependent variable. The major source of data used in this study was the secondary source. Thus, the data for this study was obtained from various issues of the Central Bank of Nigeria Statistical Bulletin and the National Bureau of Statistics Summary of Abstract (1990 to 2020). These data covered information on Foreign Direct Investments abroad, External Debt servicing, external reserves and capital and financial account deficits serving as the dimensions of Capital Flight, and the values of Unemployment Rate.

3.1 Models Specifications

The analysis was based on multiple linear regression models. Therefore, the model used for the purpose of this study is stated below:

3.1.1 Unemployment model

We adopted the model of Uddin, Yousuf and Islam [9]. Uddin, Yousuf and Islam estimated a model where unemployment rate was a function of Capital flight in Bangladeshi. They specified their model as; $UNP = f(EGR, EXD, INF, IRS, TOP)$. This model was adopted and Capital Flight disaggregated into flows of foreign direct investment abroad, external debt differentials and external reserves. Thus, our unemployment model was stated as:

$$UNE = f(FIA, EXR, EXD, CFA) \text{-----}(3.4)$$

Stating the exact or mathematical form of (4) above we had:

$$UNE = \beta_0 + \beta_1(FIA)_t + \beta_2(EXR)_t + \beta_3(EXD)_t + \beta_4(CFA)_t \text{-----}(3.5)$$

Economic relationships are inexact therefore stating (5) above in econometric form we had:

$$UNE = \beta_0 + \beta_1(FIA)_t + \beta_2(EXR)_t + \beta_3(EXD)_t + \beta_4(CFA)_t + U \text{-----}(3.6)$$

Apriori Expectation: Nigeria as most of the developing countries lack the required capital for

investment that would ultimately create jobs. Therefore the indiscriminate movement of investable capital in form of capital flight will create an adverse negative effect on the country's economy which will result in low production capacity and unemployment. Therefore, capital flight will contrast the production capacity of a country as it will limit the available investable capitals which will in turn bring about a situation of increased unemployment.

The apriori expectation on the relationship between foreign direct investment outflow and unemployment is expected to be positive, this is supported by the Solow's neo-classical theory (model) which advocates that foreign direct investment outflow will result in the depletion of the capital stock of a country which will lead to reduction in production capacity and consequently laying off of workers resulting in increased state of unemployment. Thus, we expect;

$$\frac{UNE}{FIA} > 0$$

The relationship between external reserve and unemployment rate is expected to be positive, this is expected apriori, and can be anchored on the mercantilist theory which argues that countries accumulate external reserve in order to manage effectively, the exchange rate and maintain international competitiveness in terms of trade, countries thus, can borrow abroad, attract foreign capital and promote domestic private investment which will reduce unemployment. Thus depletion of Nigeria's external reserve will cause a rise in unemployment as the economy will be vulnerable to external shock. Thus, we expect;

$$\frac{UNE}{EXR} > 0$$

The relationship between external debt servicing and unemployment rate is expected to be positive, this is expected apriori, and can be anchored on the dependency theory which argues that the dependent position of most third world countries has made them to be susceptible and vulnerable to the machinations of the western metropolitan countries. In the case of Nigeria, external debt burdens are currently a limiting factor in terms of employment creation. We thus expect that;

$$\frac{UNE}{EXD} > 0$$

The relationship between capital and financial account and unemployment rate is expected to be positive apriori, this can be premised on the mercantilist theory which advocates that the existence of accumulation of external reserves is to maintain international competitiveness in terms of trade by attracting foreign capital and promoting private domestic investment which reduces unemployment. Consequently, the deficits in the capital and financial account will cause a shortage in investible financial resources as well as lower economic/productive activities which will in turn increase unemployment rate. Therefore we expect;

$$\frac{UNE}{CFA} > 0$$

Thus, in the unemployment model, we expect a positive relationship between capital flight and unemployment rate. Therefore,

$$\beta_{1>0}; \beta_{2>0}; \beta_{3>0}; \beta_{4>0}.$$

Where;

- FIA = Foreign Direct Investment Abroad
- EXR = External Reserves
- EXD = External Debt Servicing
- CFA = Capital and Financial Account Deficits
- UNE = Unemployment Rate

3.2 Methods of Data Analysis

This study adopted the econometric technique. According to Theil (1971), cited in Gujarati and Sangeetha [59], econometrics is concerned with the empirical determination of economic laws. It is a combination of economic theory, mathematical economics and statistics, but is completely distinguished from each of these three branches of science [60].

For the purpose of our analysis here, the Autoregressive Distributive Lag (ARDL)/bond test approach developed by Pesaran, Yongcheol & Richard, [61] was adopted as our data sets consisted of variables integrating both at level (0) and at first difference (order 1).

The Autoregressive Distributive Lag (ARDL)/bond test approach was used to establish a long run relationship between the variables in the model. This approach was adopted at this instance because it is suitable for use with a mixture of variables integrated at level I (0), variables integrated at first difference I (1) or variables that are fractionally integrated [61].

However, for the avoidance of having any variables integrated at order 2, we made use the Augmented Dickey Fuller (ADF) test to formally explore the stochastic properties of each individual series. Another reason for the suitability of the ARDL approach is because it involves a single equation setup, making it simple to implement and interpret. Also, different variables can be assigned different lag lengths as they enter the model. And finally, because of its extra robustness and better performance for small sample size such as this study period [62].

The bond test is based on the f-test which has a non-standard distribution and with two sets of critical bounds provided by Pesaran, Yongcheol & Richard, [61]. The lower critical bound assumes that all the variables are integrated at level I (0), while the upper bound assumes all the variables to be integrated at first difference I (1).

4. RESULTS AND ANALYSIS

In this section, pre-estimation, estimation and post estimation tests were carried out and presented in an orderly manner to address the objective of this study, where necessary, tables and figures were used to buttress the point of the researchers.

From Table 1 shows, it can be seen that both the unemployment rate and capital flights variables have witnessed noticeable disparities over the period under consideration. From the results, Capital and Financial Accounts Deficits (CFA) has mean value of -325.8476, median value of -201.9711, maximum value of 1932.253, minimum value of -2496.880, Standard deviation value of 978.2561, Skewness value of -0.062590, Kurtosis value of 4.121626, Jarque-

Bera value of 1.645215 with its associated probability value of about 0.43. The result of the skewness statistic which measures symmetric nature of the data around its mean suggests that the data has a negative tail as its reported statistic is less than zero. The value for kurtosis which measures the peakedness or flatness of the data suggests that the distribution of the data is relatively leptokurtic as the reported statistic is greater than 3. The Jarque-Bera which measures the normal distribution of the data suggests that the data is normally distributed as the test statistic and its associated probability value of 0.43 is greater than the conventional 5% significance level.

A further look at Table 1 reveal that External Debt servicing (EXD) has a mean value of 185188.6, median value of 61418.27, maximum value of 1165895, minimum value of -408091.5, standard deviation value 321774.4, skewness value of 1.980029, kurtosis value of 7.042764, Jarque-Bera value of 41.36692 and its associated probability value of 0.000000. The skewness statistic which measures the symmetric nature of the distribution of the data suggest that it has a long positive tail while kurtosis statistic that measures the peakedness or flatness of the distribution of the data suggest that it is leptokurtic (peaked) and the Jarque-Bera statistic and its associated probability value suggest the null hypothesis of the variable been normally distributed was rejected.

Again, Table 1 revealed that External Reserves (EXR) has a mean value of 2.42E+10, median value of 2.80E+10, maximum value of 5.36E+10, minimum value of 1.20E+09, standard deviation value of 1.88E+10, skewness value of 0.109755, kurtosis value of 1.347289 and Jarque-Bera

Table 1. Descriptive statistics

Statistic	CFA	EXD	EXR	FIA	UNE
Mean	-325.8476	1.85E+05	2.42E+10	0.371715	12.49194
Median	-201.9711	6.14E+04	2.80E+10	0.252235	14.7
Maximum	1932.2530	1.17E+06	5.36E+10	1.919487	21.1
Minimum	-2496.880	-4.08E+0	1.20E+09	-0.07816	1.90
Std. Dev.	978.2561	3.22E+05	1.88E+10	0.401732	6.552914
Skewness	-0.062590	1.980029	0.109755	2.248782	-0.51224
Kurtosis	4.121626	7.042764	1.347289	8.520115	1.702378
Jarque-Bera	1.645215	41.36692	3.590364	65.48717	3.530651
Probability	0.439285	0.000000	0.166097	0.000000	0.171131
Sum	-10101.28	5.74E+06	7.49E+11	11.52316	387.2500
Sum Sq.Dev.	2.87E+07	3.11E+12	1.06E+22	4.841668	1288.220
Observations	31	31	31	31	31

Source: Author's Computation using Eviews 10

value of 3.590364 and its associated probability value of 0.166097. The skewness value indicates that the distribution of the data on the variable has a positive long tail and the kurtosis value suggest that the distribution of the data on the variable is leptokurtic (peaked) while the Jarque-Bera statistic value and its associated probability value suggest that the null hypothesis of the variable been normally distributed could not be rejected.

The descriptive statistics for Foreign Direct Investment Abroad (FIA) on Table 1 shows that the variable has a mean value of 0.371715, median value of 0.252235, maximum value of 1.919487, minimum value of -0.078157, standard deviation 0.401732, skewness value of 2.248782, kurtosis value of 8.520115 and Jarque-Bera value of 65.48717 and its associated probability value of 0.000000. The skewness statistic suggests that the distribution of the data on the variable is leptokurtic (peaked) and finally, the Jarque-Bera statistic and its associated probability suggest the rejection of the null hypothesis that the distribution of the data on the variable follows the normal distribution was rejected.

Table 1 further showed the descriptive statistics for Unemployment (UNE). It has a mean value is 12.49194, median value of 14.70000, maximum value of 21.10000, minimum value of 1.90000, standard deviation value 6.552914, skewness value of -0.512246, kurtosis value of 1.702378 and Jarque-Bera statistic value of 3.530651 with its associated probability value of 0.17. The skewness statistic that measures the symmetric nature of the data around its mean suggests that the distribution of data has a negative long tail. The kurtosis statistic which measures the peakedness or flatness of the distribution of data suggest that the distribution is platykurtic (flat) while the Jarque-Bera statistic which measures the normal distribution of the data suggest that

the null hypothesis that the distribution of the data follows the normal distribution could not be rejected as the reported probability value is greater than the conventional 5% significance level.

The unit root test conducted using the Augmented Dickey-Fuller (ADF) technique gave the result presented in Table 2 shows. It shows that Current and Financial Account Deficits (CFA), and Foreign Direct Investment Abroad (FIA) were all stationary at level. That is, their test statistic is more negative than 5% significance level. This implies that these variables have no unit roots at level or they became stable without differencing. Therefore the null hypothesis that there is unit root in CFA and FIA is rejected. However, the result shows that External Debt servicing (EXD), External Reserve (EXR) and Unemployment rate (UNE) were all stationary at first difference. This implies that these variables have no unit roots at first difference or they became stable after differencing once. Base on this result, the null hypothesis of unit root is rejected at 5% significance level after differencing the variables once.

Table 3 shows the long run equilibrium relationship between the dependent variable and independent variables in the Unemployment rate model. The Autoregressive-Distributed lag (ARDL) bound test for long run dynamics suggest that long run equilibrium exists between the variables given that the F-statistic of 5.005300 is greater than the critical value at 5%. Thus, the null hypothesis that 'No levels relationship exists' among the variables in the unemployment rate model is rejected. The confirmation of long run relationship is a pre-condition for estimating the long run coefficients and error correction model (ECM) for the unemployment rate equation.

Table 2. Unit Root test result at level and first difference using Augmented Dickey-Fuller (ADF) technique

Variable	Level	First difference	Decision
CFA	-3.34*	-	I(0)
EXD	-2.74	-5.4*	I(1)
EXR	-1.04	-4.74*	I(1)
FIA	-3.16*	-	I(0)
UNE	-1.45	-5.16*	I(1)

*Indicates significance at 5%

Source: Author's Computation using Eviews 10

Table 3. Bound test result for unemployment rate model

ARDL Bounds Test		
Date:	10/12/21	Time: 14:07
Sample:	1994 2020	
Included observations:	27	
Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	K
F-statistic	5.005300	4
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
5%	2.86	4.01

Source: Author's Computation using Eviews 10

Table 4(a). ARDL long run result for unemployment rate model. Selected model: ARDL (4,0,3,4,4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
UNE(-1)	0.729683	0.255479	2.856138	0.0245
UNE(-2)	-1.078139	0.291659	-3.696571	0.0077
UNE(-3)	0.281881	0.207671	1.357348	0.2168
UNE(-4)	-0.287574	0.165254	-1.740197	0.1254
CFA	-0.000362	0.001044	-0.34694	0.7388
EXD	-8.00E-07	2.42E-06	-0.331224	0.7502
EXD(-1)	-4.33E-06	3.05E-06	-1.419537	0.1987
EXD(-2)	4.06E-06	4.05E-06	1.003152	0.3492
EXD(-3)	-1.73E-06	2.36E-06	-0.73508	0.4862
EXR	-9.31E-11	1.63E-10	-0.571351	0.5856
EXR(-1)	4.32E-11	2.26E-10	0.191577	0.8535
EXR(-2)	2.25E-10	2.63E-10	0.858048	0.4193
EXR(-3)	-3.19E-10	2.89E-10	-1.10609	0.3052
EXR(-4)	3.12E-10	1.90E-10	1.643161	0.1444
FIA	-8.161794	3.893103	-2.096475	0.0743
FIA(-1)	-0.512216	1.892945	-0.270592	0.7945
FIA(-2)	-6.101879	1.765615	-3.455952	0.0106
FIA(-3)	1.991031	2.844458	0.699968	0.5065
FIA(-4)	-8.113416	2.46426	-3.292435	0.0133
C	21.98052	5.019531	4.378999	0.0032

Source: Author's Computation using Eviews 10

Table 4(b). Long run coefficients with restricted constant and no trend for Unemployment rate model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CFA	-0.000267	0.000772	-0.346500	0.7391
EXD	-0.000002	0.000003	-0.634435	0.5460
EXR	0.000000	0.000000	4.356839	0.0033
FIA	-15.432781	2.124088	-7.265604	0.0002
C	16.231988	1.446991	11.217754	0.0000

$$EC = UNE - (-0.0002 * CFA - 0.0000 * EXD + 0.0000 * EXR - 15.4327 * FIA + 16.2319)$$

Source: Author's Computation using Eviews 10

Table 4 (a&b) shows the summary of the long run result of unemployment rate model. Capital and Financial Account deficit is negatively related to unemployment rate. This means that an increase (decrease) in capital and financial account deficit would bring about decrease (increase) in unemployment rate. Similarly, external debt servicing is inversely related to unemployment rate. That is, an increase (decrease) in external debt servicing would bring

about decrease (increase) in unemployment rate which is contrary to theoretical expectation. The dependency theorists argued that the dependent position of the third world countries has made them susceptible and vulnerable to the machinations of the Western metropolitan countries. Thus, external debt burdens in the gamut of debt servicing limits the availability of capital for investment that would exacerbate unemployment rate. Going further, external reserve is positively related to unemployment rate. An increase (decrease) in external reserve would bring about increase (decrease) in unemployment rate. Finally, foreign direct investment abroad is negatively related to unemployment rate. This implies that an increase (decrease) in foreign direct investment abroad would bring about decrease (increase) in unemployment rate which is contrary to theoretical expectation. Solow's neoclassical growth theory advocates that foreign direct investment outflow would result in depletion of capital stock of a country that would lead to reduction in production capacity and consequently laying off workers resulting to increased state of unemployment.

Table 5 shows the error correction mechanism for unemployment rate model. The contemporaneous effect component of capital and financial account deficit had a negative sign suggesting an inverse relationship between capital and financial account deficit and unemployment rate in the short run. Thus, an

increase (decrease) in capital and financial account deficit would bring about decrease (increase) in unemployment rate. However, the coefficient is not significant given its reported probability value. Similarly, the contemporaneous effect coefficient for external debt servicing and its lag 1 are negatively related to unemployment rate whereas, its lag 2 is positively related to unemployment rate. However, all the coefficients are not significant given their respective probability values.

The coefficients of the contemporaneous effect of external reserves and its lag 1, 2 and 3 are negatively related to unemployment rate while its lag 2 is positively related to unemployment rate in the short run. However, all the coefficients of external reserves are not significant given their respective probability values.

The coefficients of foreign direct investment abroad shows that its contemporaneous effect component and lag 2 of it are inversely related to unemployment rate whereas, lag 1 and 3 are positively related to unemployment rate. However, only the lag 1 coefficient is significant given its reported probability value of 0.01 that is less than the conventional 5% (0.05) significance level.

The error correction term is rightly signed, less than one and significant given its reported probability value of 0.00 that is less than the conventional 5% (0.05) significance level. This

Table 5. ARDL Error Correction Mechanism (ECM) result for unemployment rate model with selected model: ARDL (4, 0, 3, 4, 4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(UNE(-1))	1.083832	0.267394	4.053305	0.0049
D(UNE(-2))	0.005693	0.170810	0.033328	0.9743
D(UNE(-3))	0.287574	0.165254	1.740197	0.1254
D(CFA)	-0.000362	0.001044	-0.346940	0.7388
D(EXD)	-0.000001	0.000002	-0.331224	0.7502
D(EXD(-1))	-0.000004	0.000004	-1.003152	0.3492
D(EXD(-2))	0.000002	0.000002	0.735080	0.4862
D(EXR)	-0.000000	0.000000	-0.571351	0.5856
D(EXR(-1))	-0.000000	0.000000	-0.858048	0.4193
D(EXR(-2))	0.000000	0.000000	1.106090	0.3052
D(EXR(-3))	-0.000000	0.000000	-1.643161	0.1444
D(FIA)	-8.161794	3.893103	-2.096475	0.0743
D(FIA(-1))	6.101879	1.765615	3.455952	0.0106
D(FIA(-2))	-1.991031	2.844458	-0.699968	0.5065
D(FIA(-3))	8.113416	2.464260	3.292435	0.0133
CointEq(-1)	-0.354148	0.077605	-4.510910	0.0028

R-Square = 0.96; Durbin-Watson = 2.98; AIC = 4.38 & SC = 5.34

Source: Author's Computation using Eviews 10

Table 6. Model diagnostic test for unemployment rate model

Diagnostic test	F-statistic	Probability
Jarque-Bera test for normality	1.380	0.501
Breusch-Godfrey serial correlation LM test	1.456	0.094
Breusch -Pagan Godfrey Heteroskedasticity test	0.787	0.683
Ramsey RESET test for specification error	0.082	0.783

Source: Author's Computation using Eviews 10

implies that the variables in the unemployment model adjust to equilibrium whenever there is disturbance to its long run path at a speed of about 35%.

The results of the diagnostics tests on the residual as reported in Table 6 reveal that Jarque-Bera test for normality shows that the error term is normally distributed around the mean as the null hypothesis of normal distribution is accepted. The Breusch-Godfrey serial correlation LM test statistic of 1.456 and its associated probability of 0.094 suggest the absence of autocorrelation. Furthermore, the Breusch-Pagan Godfrey test for heteroscedasticity of 0.787 and its associated probability of 0.683 revealed that heteroscedasticity is absent in the model as we accept the null hypothesis of homoscedasticity. The Ramsey RESET test indicated that no variable is missing in the model as the null hypothesis is also accepted. The adherence of the model to the basic assumptions of ordinary least squares estimation affirm that the unemployment model is good for prediction and forecast hence the best linear estimator (the BLUE).

5. DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Discussion and Conclusion

The outcome of the analysis revealed that capital and financial account deficit is inversely related to unemployment rate but not significant in both long and short run period, this outcome does not aligns with the findings of Salandy and Henry [53] which established that capital flight increases unemployment. Similarly, external debt servicing is inversely and insignificantly related to unemployment rate in Nigeria both in the short and long run period which corroborates the findings of Bredino, Fiderikuma and Adesuji [52]. Going further, the result also revealed that external reserve is also positively and significantly related to unemployment rate in the long run which negates the findings of Uddin,

Yousuf and Islam [9]. Thus, increased external reserve exacerbate unemployment rate in Nigeria. Our outcome also showed that foreign direct investment abroad is inversely and significantly related to unemployment rate in the long run. Thus, Outflow of foreign direct investment decrease unemployment rate in Nigeria, this also negated the earlier finding of Anetor [51] which established a positive relationship between capital flight and macroeconomic variables.

Generally, our result revealed that capital and financial account deficit, external debt servicing and foreign direct investment abroad are inversely related to unemployment rate while external reserve is positively related to unemployment rate. However, Capital and financial account deficit and external debt servicing are not significant but foreign direct investment abroad and external reserves are significant.

5.2 Recommendations

Based on the results and findings from this study, the following recommendations are made:

- I. External debt acquired by the Nigerian government should be judiciously invested in infrastructural development to encourage the inflows of investment that would ultimately bring about economic growth, reduce unemployment, as well as enhance human development in Nigeria.
- II. There should be concerted efforts by the government geared towards encouraging the inflow of capital as well as financial resources into the Nigerian economy through proactive macroeconomic policies which would reduce the deficit experienced in the capital and financial account as well as spur economic development.
- III. Government should initiate positive incentives for investors to keep their resources in Nigeria. This incentive can be in form of providing investment friendly environment for businesses to thrive.

Provision of social overheads as well as formulating and implementing consistent policies that would serve as the needed incentive.

5.3 Contribution to Knowledge

This study adopted selected measures of capital flight which no other empirical study in literature had adopted which has expended the scope of positive measures of capital flight. Also, this study has established that capital flight does not retard human development as well as not exacerbating joblessness in Nigeria.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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