Foreign Portfolio Investment Creates Positive Spillovers, But How?

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Abstract

Granted that there are beneficial effects of portfolio capital flows for employment generation, what are the channels of effect? Identifying the channels should beneficially impact policy quality, and can come about through a disaggregation of the components of portfolio capital. In this study, the search for the channels of effect is modeled in a reduced form, linear manner, regressing employment on portfolio capital's components while controlling for jobs consequent upon growth of the economy. It turns out that the coefficients of all the component parts are non-trivial. In addition, debt by way of bonds and money market instruments proved positively related to employment in a significant manner, providing a much hoped-for vista for further action on the employment generation front. Equities exhibited the reverse effects, while the notion of jobless growth, feared for Nigeria for quite a while, was confirmed. It was recommended that Nigeria should locate consciously on the technology continuum in the production process, and encourage bonds and money market instruments. Further study was recommended on the mechanism of effect.

Keywords: Disaggregation, Employment growth, JEL Classification, Portfolio investment and Unemployment

Introduction

Foreign portfolio investment is classified as the most volatile of all foreign capital flows, exhibiting surges and waves which, according to IMF (2011), have hurt economies. Reverse flow and its disruptive effects have become well established features of portfolio capital and can be generally regarded as its weakest point. However, its benefits are not in doubt. It supplements domestic savings (Karimo & Tobi, 2013), provides foreign exchange, and promotes employment generation (Elekwa, Aniebo & Ogu, 2016). These are valuable spillovers for growth and development.

In a bid to realize the spillovers, many developing countries have sought greater capital inflows, liberalizing financially as recommended by the Washington Consensus. Relative successes have greeted some who worked at this goal, increasing their general inflow. Figure 1 shows Nigeria's experience in a difficult period around the most recent global financial crises (2013 to 2017). Following the crash in 2014, the bold effort to stabilize the economy and resume growth yielded a rebound in foreign capital inflow, even if achieved with much difficulty and at great costs. Such effort was however deemed justified by fears of a total crash on one hand, and promises of the expected spillovers on the other hand.
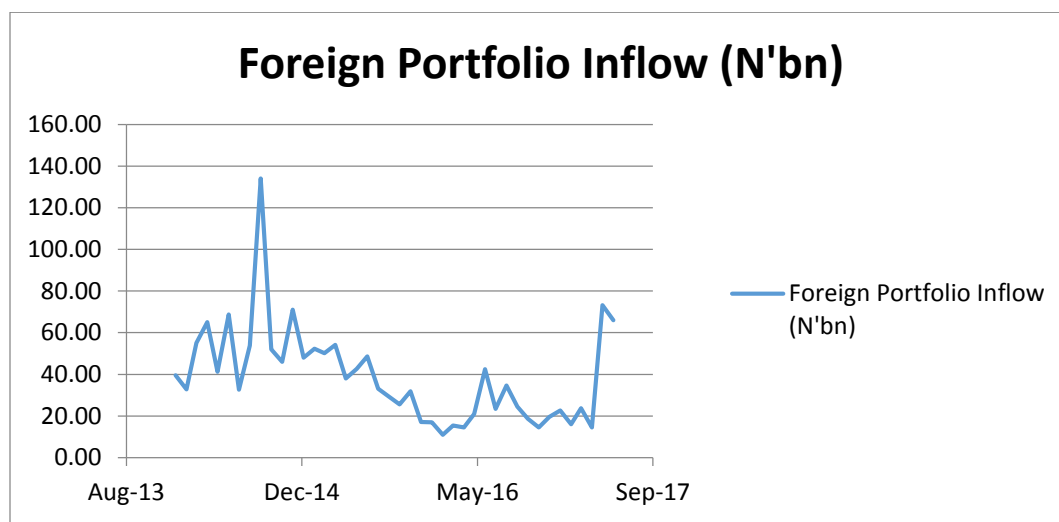
Figure 1: Nigeria's foreign capital inflow

Granted that there are spillovers, how do they take effect? In the first instance, what is the channel of effect? Can policy support such channel? Identifying the channel of effect should beneficially impact policy quality. Disaggregation of the components of portfolio capital inflows may facilitate such identification, and also allow a meaningful assessment of individual component effects. This will permit a comparative view, since what is seen now is the aggregated impact of all the components. This approach was adopted earlier with capital flows in general. Their disaggregation led to a better appreciation of the place of portfolio investment, as well as the recognition of the relative stability and more beneficial impact of direct investment. These recognitions made room for more precise policy formulation.

This therefore becomes the focus of this study namely, that given the beneficial effects of foreign portfolio capital inflows for employment generation, are channels identifiable through which such benefits can more readily be harnessed or delivered? And upon isolation, can such channels be strengthened in order to sustain the flows and checkmate possible reverse-flow attendant to economic challenges and other portfolio capital flow dynamics?

In Nigeria, employment generation is a very urgent need. The economy is one in which growth that is non-inclusive, alternating with negative or no growth, along with a population growth rate that refuses to flag, and a polity that hardly can get off the crises burner; these have joined hands to give rise to inadequate growth of employment and a continuous rise in unemployment. Figure 2 shows the trend of population growth, economic growth and unemployment in Nigeria.
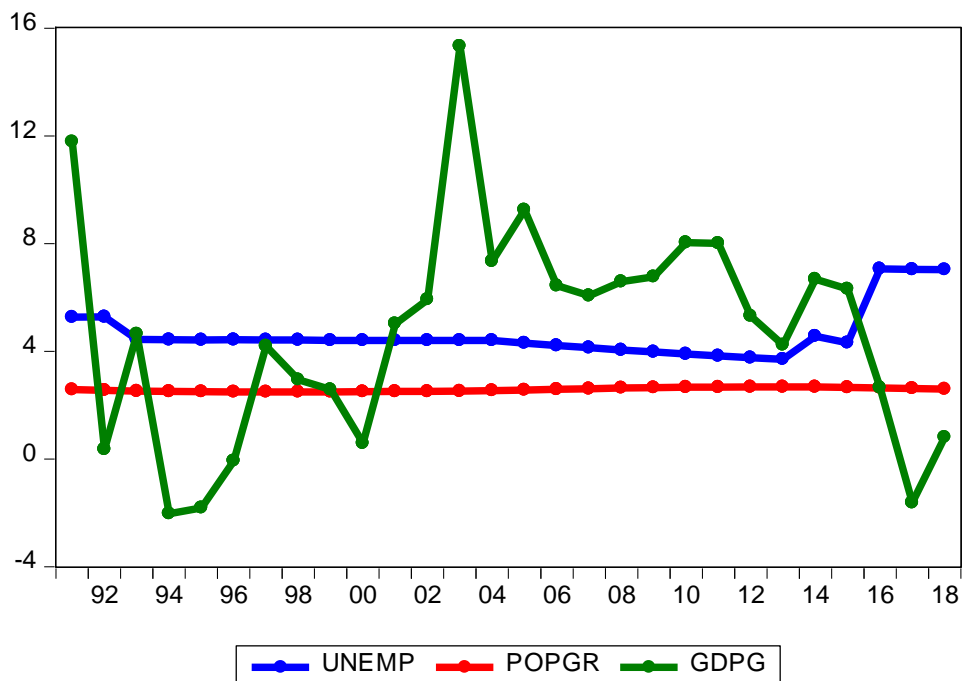
Figure 2: Population growth, economic growth & unemployment in Nigeria (1990-2018).

Certainly, a preponderance of a youthful but idle population is undesirable. If nothing can be done right away regarding the structure of the population, something should be possible regarding employment generation, thereby ameliorating the pains and the restiveness of the unemployed. It might even lead to a positive mobilization of the teeming youths. In contributing to the endeavour to address this undesirable situation, this study enquires into the channels through which foreign portfolio investment might contribute to employment generation in Nigeria. Three specific channels, enjoined on the study by data availability, were considered. These are: equity, debt as bonds and money market instruments.

Review of literature.

On account of its volatility, in particular its sudden reverse flow and attendant instability, scholars have not bothered about the employment generating potentials of portfolio capital. Yet it is generally known that portfolio capital is sought after for its facilitation of economic activity, and in many cases for its contribution to output. Therefore, it is in this indirect manner that the literature documents the employment effects of portfolio capital flow and its possible role in employment generation.

As early as 2008, Ekeocha (2008) opined that Foreign Portfolio Investment though volatile in nature is an important source of fund to support investment in an economy that has a wide saving-investment gap such as Nigeria. The study then modeled the long run determinant of Foreign Portfolio Investment in Nigeria over the period 1986-2006 and

found Foreign Portfolio Investment to be co-integrated with, and positively related to, real rate of return on investment in the capital market, real interest rate and investment; but negatively related to real exchange rate, market capitalization, trade openness and institutional quality in Nigeria. In the light of Nigerian government's initiatives to attract Foreign Portfolio Investment, Tokunbo (2010) stressed that despite the increased flow of Foreign Portfolio Investment to developing countries, especially sub Saharan African countries including Nigeria, low level of per capita income, high unemployment rate, low and falling GDP are still prevalent. Their study therefore analyzed the direction and significance of the effect of Foreign Portfolio Investment in the economic growth in Nigeria covering the period 1990-2005. It revealed that Foreign Portfolio Investment, Domestic Investment growth and Net Export growth impacted positively and significantly on economic growth in Nigeria.

Duasa and Kassim (2010) examined the relationship between foreign portfolio investment (FPI) and Malaysia's economic performance from 1991 to 2006. The findings suggest that economic performance is the major pull factor in attracting FPI into the country. Olotu and Jegbefumwe (2011) sought the impact of foreign portfolio investment (FPI) on economic growth in Nigeria using error correction model (ECM). Their result reveals that FPI has a positive relationship with the growth rate of real non-oil GDP.

Ozurumba (2012) assessed the impact of stock market returns on foreign portfolio investment in Nigeria using multiple linear regression analysis. The results showed that foreign portfolio investment has a positive but insignificant impact on stock market returns while unidirectional causality runs from stock market returns to foreign portfolio investment in the economy. Ogujiuba and Obiechina (2012) examined the relationship existing among Foreign Private Capital components and Foreign Portfolio Investment, economic growth and some macroeconomic indicators such as interest rate and inflation rate using time series data from 1986-2008. A non-restrictive vector Autoregressive (VAR) model was developed with restrictions imposed to identify the orthogonal (structural) components of the error terms. The result indicated that the response of the GDP to shocks from the Foreign Portfolio Investment was surprisingly not contemporaneous.

Onuorah and Eze (2013) took up the impact of macroeconomic variables on foreign portfolio investments in Nigeria between the periods of 1980 – 2010. Macroeconomic variables were found to be of statistically insignificant effect on FPI. Eniekezimene (2013) examined the impact of foreign portfolio investment (FPI) on capital market growth in Nigeria using ordinary least squares (OLS) method, and found that foreign portfolio investment (FPI) had a positive impact on capital market growth. Hsu (2013) investigated how foreign investment portfolios affect the domestic stock market of host countries by comparing the performance of favoured and un-favoured stocks of foreign investors. The findings showed that market participants did herd-in the foreign-investor-favoured stock group, but herded-in the un-favoured group only in bear markets.

Baghebo and Apere (2014) studied the impact of foreign portfolio investment on economic growth in Nigeria from 1986 – 2011, and discovered that foreign portfolio investment had a positive long run relationship with real domestic product in Nigeria.

Ololade and Ekperiware (2015) assessed the contribution of foreign portfolio investment towards financing infrastructural deficits, while investigating factors that attract FPI into the Nigerian bond market. The result showed that there was a significant relationship between FPI and bond yield. Adebisi and Arikpo (2017) examined the relationship between financial market performance and foreign portfolio investment in Nigeria for the period 1984 to 2015 using the Autoregressive distributive lag (ARDL). Findings from the analysis showed that financial market performance has no long run causal relationship with foreign portfolio investment in Nigeria.

Elekwa *et al* (2016) in their study of the Nigerian economy for the period 1980 to 2014, found that in the long term, portfolio investment impacts employment growth positively and significantly. Akinmulegun (2018) examined the effect of capital market development on foreign portfolio investment in Nigeria between 1985 and 2016 using Vector Error Correction Mechanism (VECM). Result indicated that market capitalization has negative significant effect on foreign portfolio investment in Nigeria. However, Ohiaeri (2019) examined interactions amongst foreign portfolio investment, oil price movement and capital market performance in Nigeria from 1970 to 2016 using Vector Auto Regression, Granger causality and multi- regression econometric techniques. The findings revealed a unidirectional long run Granger causality existing between foreign portfolio investment and capital market performance. Appiah – Kubi (2020) analyzed the role of foreign capital investment in the high unemployment situation in Ghana using descriptive statistics and found that foreign capital investment aggravated unemployment instead of ameliorating it.

In summary, although some studies reported negative effects of portfolio capital flow, the majority did uncover some economic activity enhancement effects of portfolio capital. No enquiry was made by any of the works reviewed, however, on the channel through which such beneficial effect was delivered. That is the focus of this study.

Materials and Method

This study models the problem in a reduced form, linear manner by regressing employment on portfolio capital's components while controlling for jobs consequent upon growth of the economy. For specification, we begin with the general form:

$empl = f(portfolio\ capital\ flow, gdpg) \equiv f(equity, bonds, mm, gdpg)$ …………. (1)
Where empl = employment level; equity = portfolio equity flows; bonds = portfolio bonds flow; mm = portfolio money market instruments and gdpg = GDP growth.
We estimate the following specification:
$lnempl = \varphi_0 + \varphi_1 lnequity + \varphi_2 lnbnds + \varphi_3 lnmm + \varphi_4 gdpg + \epsilon$ ……………. (2)
Where φ_s are the parameters; ln = natural logarithm and ϵ the stochastic error term.

Disaggregated portfolio data came from Central Bank of Nigeria statistical bulletin (CBN, 2018), while data for employment level and output growth came from Pen World 9.5 and World Development Indicators (WDI) respectively. The disaggregated portfolio data proved to be virtually perfectly linearly correlated (Appendix 2); and the same in their relationship with employment levels. Concerns about endogeneity arose from the possible interaction between jobs consequent upon GDP growth and the probable share of portfolio capital flows therein i.e. its contribution to employment. Available data size further proved to be very limiting and low frequency. In the light of these features data transformation became necessary. This was carried out first by log-transforming the data except output growth, then differencing portfolio components to isolate their non-cumulative effects, and finally testing for Stationarity around a linear trend. The logic, of course, is that, granted that there are shocks, what becomes of post shock behaviour in a normally (or at least expectedly) trending series? To answer this question, KPSS (1992 a, b) Stationarity test was employed. With stationarity around a linear trend as the basic interest, no supportive or confirmatory test was required or undertaken. As required by this procedure, the series were already log-transformed, and as such any exponential trends would have been turned into linear ones. The outcome of these steps resulted to substantially reduced correlation levels (Appendix 3), and level-stationary series (Table 1).

Table 1: Kwiatkowski-Phillips-Schmidt-Shin (KPSS)
Stationarity Test Result - Summary

Variable	Sig, level (5%)	LM Stat	Outcome
Lnempl	0.146000	0.129216	I(0)
Lneq	0.146000	0,122291	I(0)
Lnbd	0.463000	0.264958	I(0)
Lnmm	0.146000	0.111473	I(0)
Gdpg	0.146000	0.112295	I(0)

Source: Authors' computation

In the light of the outcomes, OLS procedure was adopted for estimation. However, the likelihood of persistence of endogeneity and the very data size, suggested the employment of the Newey and West's (1987) Heteroscedastic and Autocorrelation Consistent (HAC) covariance matrix estimator, whose standard errors are robust.

Result of the Findings
The following results were obtained using E Views 10.
Table 2: Estimates- HAC std errors & covariance
(see Appendix for full result)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNEQ	-0.021215	0.096611	-0.219595	0.8325
LNBD	0.039940	0.009868	4.047275	0.0049
LNM	0.041414	0.012618	3.282154	0.0134
GDPG	-1.17E-05	8.93E-06	-1.313573	0.2304
C	3.556085	0.042794	83.09779	0.0000

Source: Authors' computation

These are tentative results basically indicative of directions for further enquiry. Nevertheless, interesting findings emerged. First, bonds turned out to be highly significant. In addition, it is positively related to employment levels in the national economy. Not surprisingly, it is positively correlated with output growth (Appendix 3). This is thus a promising area for further attention.

 Money market instruments followed the same general pattern, equally suggesting a promising further enquiry. This is not withstanding that it is negatively related to output growth. Equity is not statistically significant at the 5% level and its relationship with employment levels is also negative.

The coefficients of all three components of Portfolio capital flow are, however, non-trivial. This very outcome provides impetus and sustenance for continued inquiry into the ways that portfolio capital might contribute to economic welfare of the nation, and in particular, employment generation.

The estimated outcome of output growth is in line with recent experiences in the economy. It points to non-inclusive growth. Indeed, the negative relationship with employment levels, and it's extremely small coefficient, indicate that it matters little in the quest for employment generation. The nature of what growth has been wrought might even reduce employment growth through capital intensive expansion path as in the oil sector, and mechanization of all sorts in an economy awash with labour; competitive pressures, not least from globalization, keep mounting on firms, for the so called state-of-the-art operational processes in which more and more functions are 'out sourced' to computers and electronics in the on-going global computerization and labour saving efforts. This trend of organizational growth in virtually all aspects of resource engagement except employment level, is already noticeable in the banking sector in Nigeria (Aniebo, Oguanobi & Akamobi, 2013).

It seems clear from the foregoing that employment generation may not be meaningfully achieved if it is approached on a 'residual effect' basis, that is, if it is sought as the natural outcome of economic activity. Theory expects higher employment levels to result from increasing output levels. However, the reality of jobless growth demonstrates that sometimes conscious effort is called for to make jobs grow with output. Portfolio flow, and in particular, debts in the forms of bonds and money market instruments, from our result, show a great promise for this. The reason may not be unconnected with the structure of such flows which, unlike equity flow, exhibit specific tenures, and always feature measurable, project-like goals or targets. It is in these two channels with greater likelihood that further inquiry is called for, with a view to isolating the precise mechanism at work. Meanwhile, such flows, if encouraged, will most likely forward the quest for employment growth in Nigeria.

It is also not out of place to contemplate technology rating in all public projects, and to provide incentives for private investors who toe the line indicated. Specifically, to

contribute to the engagement of our abundant labour supply, labour intensive production methods should be preferred in all sectors of the economy, and rewarded for their adoption by private investors. This is simply a conscious decision to locate somewhere on the technology continuum in the production process, not to lower quality or play second fiddle in any way. It is probably obvious that, at least on two fronts, the Nigerian economy is not ready for cutting edge technology just yet. These two fronts, amidst numerous others, are *energy provision* and *maintenance culture.* This reality should not hinder the struggle to consciously adopt and implement *international best practice*. It should rather encourage us to operate where we currently are, compel us to put all our resources into use so as to grow from there. And if we get our macro-economy right, our economy will prove just as competitive. Policy can enshrine this requirement in all public undertakings, the way federal character has been enshrined in all public affairs.

Conclusion

The persistence of high levels of unemployment and population growth, as well as increasing pool of youthful but idle population in Nigeria, can only spell doom for the country if quick solutions are not found. Such solutions can only come from informed insights into the workings of the economy, having thus far defied traditional approaches. In the light of this, this study investigated the channels through which foreign portfolio flow, a non-traditional employment generator, might contribute to employment generation. The results indicated that debts in the forms of bonds and money market instruments were most promising. Encouragement of such forms of portfolio capital inflow as well as labour intensive production processes was recommended for immediate implementation while further enquiry into the mechanism of effect continues.

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APPENDIX.

Appendix 1
Dependent Variable: LNEMPL
Method: Least Squares
Date: 05/21/20   Time: 00:45
Sample: 2006 2017
Included observations: 12
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed
bandwidth = 3.0000)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNEQ	-0.021215	0.096611	-0.219595	0.8325
LNBD	0.039940	0.009868	4.047275	0.0049
LNM	0.041414	0.012618	3.282154	0.0134
GDPG	-1.17E-05	8.93E-06	-1.313573	0.2304
C	3.556085	0.042794	83.09779	0.0000

R-squared	0.910467	Mean dependent var	3.985011
Adjusted R-squared	0.859305	S.D. dependent var	0.111698
S.E. of regression	0.041897	Akaike info criterion	-3.212861
Sum squared resid	0.012288	Schwarz criterion	-3.010817
Log likelihood	24.27717	Hannan-Quinn criter.	-3.287666
F-statistic	17.79577	Durbin-Watson stat	1.359088
Prob(F-statistic)	0.000899	Wald F-statistic	37.06403
Prob(Wald F-statistic)	0.000085		

Appendix 2: Correlation Matrix before Data transformation

	EMPL	EQUITY	BONDS	MM	GDPG
EMPL	1.000000	0.975107	0.970809	0.953482	-0.033733
EQUITY	0.975107	1.000000	0.993529	0.975167	-0.018883
BONDS	0.970809	0.993529	1.000000	0.980470	-0.094074
MM	0.953482	0.975167	0.980470	1.000000	-0.074496
GDPG	-0.033733	-0.018883	-0.094074	-0.074496	1.000000

Appendix 3: Correlation Matrix after Data Transformation

	LNEMPL	LNEQ	LNBND	LNMM	GDPG
LNEMPL	1.000000	-0.009126	0.098994	-0.019531	-0.018141
LNEQ	-0.009126	1.000000	0.539755	-0.112228	0.664065
LNBND	0.098994	0.539755	1.000000	-0.224134	0.521173
LNMM	-0.019531	-0.112228	-0.224134	1.000000	-0.107104
GDPG	-0.018141	0.664065	0.521173	-0.107104	1.000000

APPENDIX 4: KPSS Stationarity Test
Null Hypothesis: LNEMPL is stationary
Exogenous: Constant, Linear Trend
Bandwidth: 2 (Newey-West automatic) using Bartlett kernel

Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.129216
Asymptotic critical values*:	level	0.216000
	5% level	0.146000
	10% level	0.119000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

APPENDIX 5: KPSS Stationarity Test
Null Hypothesis: LNEQ is stationary
Exogenous: Constant, Linear Trend
Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.122291
Asymptotic critical values*:	1% level	0.216000
	5% level	0.146000
	10% level	0.119000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

APPENDIX 6: KPSS Stationarity Test
Null Hypothesis: LNBND is stationary
Exogenous: Constant
Bandwidth: 6 (Newey-West automatic) using Bartlett kernel

Kwiatkowski-Phillips-Schmidt-Shin test statistic		
Asymptotic critical values*:	1% level	
	5% level	
	10% level	

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

APPENDIX 7: KPSS Stationarity Test
Null Hypothesis: LNMM is stationary
Exogenous: Constant
Bandwidth: 0 (Newey-West automatic) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.128587
Asymptotic critical values*:	1% level	0.739000
	5% level	0.463000
	10% level	0.347000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)

APPENDIX 8: KPSS Stationarity Test
Null Hypothesis: GDPG is stationary
Exogenous: Constant, Linear Trend
Bandwidth: 2 (Newey-West automatic) using Bartlett kernel

		LM-Stat.
Kwiatkowski-Phillips-Schmidt-Shin test statistic		0.112295
Asymptotic critical values*:	1% level	0.216000
	5% level	0.146000
	10% level	0.119000

*Kwiatkowski-Phillips-Schmidt-Shin (1992, Table 1)