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WHAT TYPE OF INVESTMENT DOES DIGITAL FINANCE PROMOTE: SPECULATIVE OR NON- SPECULATIVE?

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Abstract. *This study was set to investigate the elasticity of digital finance to foreign investment correlates in Nigeria. The quest was triggered by the need to determine whether or not foreign flows act as enablers for the development of digital finance. To determine the order of integration and ensure the stationarity of the variables used, we performed the traditional Augmented Dickey-Fuller (ADF). Using web based transaction value as a proxy for digital finance, the baseline ARDL estimates show that foreign investment flows proxied by FDI, FPI and Loans act as drivers for digital finance. Web based transaction was found to be a positively significant function of foreign portfolio and foreign loans with different coefficient of elasticity. Foreign direct investment on the other hand did not significantly affect the dependent variable over the studied period. We established cointegration following Pesaran, Shin and Smith (2001) test for cointegration by using the Bound Test results. The coefficient of the Error Correction Mechanism (-0.22) is negatively significant, which implies that 22 percent of the errors in the model are corrected annually. The ECM suggests that web based transactions adjust to the speed and dynamics of investment drivers in Nigeria within the studied period. FPI and Loans were significant. Digital finance is promoting FPI and not FDI which is not healthy. Government should review her policies on investments and pay attention to essential ingredients for boosting investments in Nigeria like ease of doing business, security and corruption.*

Keywords: *Financial stability; Investments; Digital Finance; Nigeria.*

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Introduction

Globalization and liberalization have become engines of economic development. (Guichard, 2017) Similarly, development in financial technology has equally advanced investments across the globe. Owing to all these, there is an increase in the flow of capital across the world. Invariably, foreign capital inflows have become a good source of funds towards nation building. Foreign inflows are channels through which countries have access to foreign capital in form of foreign portfolio investments (FPI), loans and foreign direct investments (FDI) (Koepke, 2015).

Various governments appreciate that there are associated benefits to attracting foreign financial capitals. Developing countries need foreign capital to augment their domestic investments. These investments are needed for an improved economic growth which translates into an enhanced standard of living (Swarnali, 2018). Foreign capital flows are crucial in developing countries as a funding alternative to businesses that ordinarily face financing challenges. Various firms can attract external funding and loan facilities from other Markets other than domestic Markets. Foreign fund flows play a major role in complementing domestic investments.

Foreign Direct Investment (FDI) also helps in human capital formation as a result of technology transfer. Capital fund flow is equally helpful as its contribution towards economic development further alleviates poverty.

Many developing countries have endeavoured to attract foreign capital flows as a substantial source of investment. Therefore, they developed many incentives to actualize this. (Ahmed, and Zlate, 2014). For instance, countries have offered investors reduction of import duties on capital goods, tax holidays and exemptions. As further attempt to attract FDI and FPI, governments in various countries developed different strategies. For instance, attention has been given by the Nigerian government on import duty exemptions, offering tax holidays and many more. Similarly, the development of both the financial institutions and Capital Markets remain a good incentive towards promoting portfolio investments (Alonso, 2015). The unique feature of FDI is that it delivers packages of resources, like, capital, technology, skills, management know-how, and marketing capabilities, along with production activities, to a host economy.

However, capital fund flows are known to be volatile (Pagliari, and Hannan, 2017). Fund flows are associated with portfolio reversals due to financial shocks. Such reversals are unpredictable. consequently, it impacts negatively on growth especially for less diversified developing countries that relies on such investments. It can further lead to a sudden exchange rate depreciation. Prices of imports may be pushed upwards as well, resulting in a crash in exchange rate affecting purchasing power of the poor households (Adler, Djigbenou and Sosa, 2014), when a country is facing devaluation of her exchange rate, the country's external debt profile is heightened compelling the government into cutting back public spending as an option towards servicing debt obligations. Conversely, spending on health and education are compromised due to deductions in public spending (Acharya, et.al, 2016). Reduction of public expenditure has far reaching implications. For instance, it negatively affects human capital development and many remain in poverty trap. Worrisome is the fact that due to the volatile nature of foreign fund flow, most developing countries cannot be certain of availability of resources needed to realize a sustainable developmental strategy (Ahrend, Goujard and Schwellnus, 2012). Digital development has been identified as one of such key strategies.

The application of internet-based digital technologies are becoming an ever more important part of the global economy. Recently, the adoption of digital economy has remained a key objective for many developing countries. Policy measures to promote investment proposed in digital development strategies tend to focus on incentives and improving digital standards. The digital economy is crucial to development and growth as it can boost competitiveness across all sectors. Financial innovations provide wider opportunity for businesses and new avenues for accessing foreign investments. For developing countries especially, digital finance has important implications for investments. The adoption of digital financing has both positive and negative impacts. It facilitates Capital flows from rich to poor countries and this is good news for developing countries attempting to bridge the investment gaps. On the flip side of it, weak regulatory issues may work against host countries as

investors withdraw their investments at will especially during financial crisis. The openings and challenges linked with the digital economy are particularly vital for developing countries.

In Nigeria, the inflows from FPI and bank loans were on the increase since the 90s.The development of the capital markets must have contributed to that. The federal government internationalized the market in 1995 after its deregulation in 1993. The internationalisation of the market was part of financial liberalization policy in the mid 2000 attracting foreigners to participate in the market extensively (CBN, 2006). The Nigerian economy through the capital market experienced increased inflows of FPI making this investment the centre stage (Uwubanmwen, & Ogiemudia, 2016). Besides the liberalization of the market, the activities of institutional investors remain an active ingredient in driving foreign flows. These institutional investors not only increased their share of company listed on the stock markets but equally, invested in other emerging markets.

Fund flows from FPI remained very high until about 2008 after the global economic and financial crisis. Fund flows from FPI into Nigeria decreased drastically. Efforts have been made to investigate the drivers of capital importation. Studies have taken note of macroeconomic, political factors and domestic financial development. (Hannan, 2017). While these factors might be some of the plausible drivers of capital importation in Nigeria, one area that has been neglected in extant literature is developments in financial technology. In this study, we re-examined the drivers of investment paying attention to digital development. Thus, what type of investment does digital finance drive? we are unaware of how web based transactions affect the country's foreign capital inflows. Consequently, policymakers lack information about how the digital environment shapes foreign capital and FDI in particular. This is important given the various efforts in attracting foreign capital.

Our study makes an important contribution to already existing literature in capital fund flows by adding an empirical analysis based on digital financing. The market participants may consider this study as an important tool in appreciating investment structure in a developing country. This study equally provides a prime opportunity for policy makers in developing countries to appreciate the urgency in facilitating the core drivers of foreign investments so as to improve their economies. Another motivation of this paper is to reconcile theories with practical reality, using the web based transaction which is expected to promote foreign investments. Further motivations for this study is on the need to moderate the level of vulnerability of foreign flows thereby achieving economic development agenda of Nigeria. It is believed that a deeper insight on the type of investments digital finance drive are critical for targeted policy. We considered Nigeria as one of the big economies in west Africa. The research findings from Nigeria will constitute a lesson for other developing countries.

The remaining part of this paper is structured as follows: Next section looks at literature, Section three presents the data and methodology adopted in the study, while section four discusses the findings and the policy implications of this study. Section five concludes with a highlight on the implications of the study.

Literature Review

Investments in different bundles of assets in another country is referred to as portfolio investment. Most developing countries run deficit budget. This limits their investments and conversely growth. The desire to bridge this gap is often fulfilled with fund inflows from other countries other than domestic financing. Foreign loans, FDI and FPI have played a vital role in mitigating the shortfall in investment due to insufficient funds. (Ekeocha et.al, 2012). Direct investment is structured in a manner that the investor is designed to have the right to participate in the management of the organization the investment is channelled to. FDI complements domestic investments, contributes to the growth and development of many developing countries (Ekine et.al, 2019). This is owing to some distinctive aspects of FDI like its associated benefits of transferring not just capital but also technology and skills. FDI to a host economy has translated into capacity building and structural change by upgrading the local industries. FDI has the potential to develop products that are not just for domestic consumption but also for exports. Product exports provide linkages that strengthens domestic firms and promotes employment and well fare of the citizenry. A major benefit of FDI is raising the labour and environmental standards and contributing to poverty alleviation (Hoggarth and Reinhard, 2016). However, for the purpose of this study, we are considering FDI at the point of entry.

Investments are diversified to obtain an optimal risk return trade off. Essentially, both individual investors, and various multinational companies are interested in forecasting and managing their portfolios to increase their wealth. (Duruechi & Ojiegbe, 2015) In developing countries, FPI is measured as a significant variable to promote foreign exchange to finance current account deficit and bridge the savings investment gap. In Portfolio investment, the attention of the investors is geared towards purchasing short term financial assets. These investments are known to be extremely volatile. The volatility nature of FPI can impact negatively on the host country as portfolios get reversed. The associated risks of investing in FPI become more as many developing countries receive more flows from it. FPI is considered as speculative in nature due to its reversal nature and could be withdrawn from the market at a short notice. This is unlike FDI which is non speculative.

Factors like country-level, industry-level and firm-level determinants have been documented in literature as drivers of foreign inflows. Similarly, inflow of FPI has been simulated by some global factors like interest rates, growth of industrialized countries (Byrne & Fiess, 2011). There may be variations in the pattern of capital inflows in developing and developed countries due to differences in economic and political structures.

Employing the use of annual data between 1981-2009, Solomon and Eka (2013) examined the relationship between Foreign Direct Investment, Foreign portfolio investment and economic growth in Nigeria. They submitted a positive but insignificant impact on the economy within the period of their investigation.

A study on Pakistan economy reveals a positive impact of FDI on economic growth (Muntah et al., 2015). They covered a period between 1995 to 2011. Similarly, the study on capital flows has remained a subject of discussion on

economic literature. From our review, the debate is inconclusive and our study further expands the literature by introducing digital technology in the debate.

Methodology

This study adopts the ARDL method due to its advantages over other regression and cointegration approaches; these include:

- Its efficiency in the face of not too large samples
- It is a dynamic model, and hence less prone to autocorrelation and other deficiencies common with other regression models
- Its ability to combine differently integrated majorly I(1) and I(0).

In the first stage, we will estimate following the ARDL baseline model:

$$webtrans = \delta_0 + \delta_1 FDI_{t-n} + \delta_2 FPI_{t-n} + \delta_3 Loan_{t-n} + \delta_4 EXR_{t-n} + \varepsilon_t \quad (1)$$

β_1-β_4 are short run dynamic multipliers, β_0 the drift and ε_t are white noise errors.

Where:

WebTrans: Web Based Transaction

FDI: Foreign Direct Investment

FPI: Foreign portfolio investment

Loan: foreign loan

Exch: exchange rate.

Results

Basic Descriptive Statistics

The basic descriptive statistics as contained in table below exposes vital statistical properties of the series under study.

Table 1. Summary of Basic Descriptive Statistics of the Variables under Study

Variables	Mean	Standard Deviation	Minimum	Maximum
WebTrans	11.045	22.246	0.880	168.2
FDI	1.13E+08	9999	33649	4.68E+08
FPI	5.23E+08	5.06E+08	7688	2.17E+08
EXCHR	205.92	66.41	149.78	313.00
Loans	1.68E+08	1.41E+08	3289	149.78
Observations	108	108	108	108

Source: Authors' Computation

The descriptive statistics in Table 1 above shows the aggregative averages and the averages of spread and dispersion. It is obvious that FDI is the most volatile of all the variables. This suggests that the vicissitudes of the Nigerian economic environment prompts foreign investor to locate and constantly relocate their investment around the mean over time. Web transaction presents interesting characteristics as the deviation lies below the maximum, above the minimum and

fairly around the mean. This shows the predictable and systematic growth rate in the acceptability of web-based payment system in the Nigerian environment.

To determine the order of integration and ensure the stationarity of the variables used, we performed the traditional Augmented Dickey-Fuller (ADF) and the results are presented in Table 2.

Variable	ADF(stat)	Critical(0.5)	Order of integration
WebTrans	-25.033(0.001)*prob	-3.45	1
FDI	-8.98(0.001)*prob	-3.45	0
FPI	-4.24(0.005)*prob	-3.45	0
EXCH	-8.12	-3.45	1
LOANS	-10.007 (0.001)*	-3.45	0

The stationarity test results indicate that the variables have mixed order of integration falling between I(0) and I(1) which undoubtedly justifies the use of ARDL as a suitable estimation approach.

From the baseline ARDL estimates reported in Table 3 below, web based transaction was found to be a positively significant function of foreign portfolio and foreign loans with different coefficient of elasticity. Foreign direct investment on the other hand did not significantly affect the dependent variable over the studied period.

Table 3. Baseline ARDL estimates

Dependent Variable: LWEBTRANS				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LWEBTRANS(-1)	0.773705	0.057948	13.35171	0.0000
LFDI	0.057499	0.047323	1.215018	0.2272
LFPI	-0.070092	0.036798	-1.904762	0.0596
LLOANS	0.103722	0.054021	1.920037	0.0576
C	-1.15553	1.240280	-0.931676	0.3537

*Source: Author's computation ARDL Autoregressive distributed lag 0.05**

We establish cointegration following Pesaran, Shin and Smith (2001) test for cointegration by using the Bound Test results reported in the Table below. Following the stated model, critical values using two sets value, lower and the upper bound were chosen. I(1) for the upper band and I(0) for the lower band. We described the decision guide in the table below:

Table 4. Guide for making a decision for the Bound Tests

State	*Inference*	*Remark*
F-stat larger than the lower and upper bound	*Fail to accept the null hypothesis of no long run relationship*	*A cointegrating relationship exists*
F-stat less than the lower and upper bound	*Do not reject the null hypothesis of no long run relationship*	*No cointegrating relationship exists*
F-stat at the chosen level of significance falls within the lower and upper bound	*Results is indecisive*	*Results is inconclusive*

It can be seen from the bound test table below that the FPSS of 3.9 exceeds the upper band at 0.05 which stands at 3.6, thus cointegration is confirmed.

Table 5. Summary of Bound Test Result

Dependent variable	F-statistics	Critical value@5%		Conclusion
LWebtrans	3.9	I0 Bound	I1 Bound	Cointegration exists
		2.5	3.6	

Source Author's cointegration

Having established the existence of cointegration following the bound test approach, next we measure the error correction representation. The result is presented in table ….. below:

Table 6. Error Correction Representation

Indices		T-stat	Standard errors	P-value
ECM(-)	-0.22	-4.003	0.054	0.0000

The coefficient of the Error Correction Mechanism (-0.22) is negatively significant, which implies that 22 percent of the errors in the model are corrected annually. The ECM suggests that web transactions adjust to the speed and dynamics of investment drivers in Nigeria within the studied period. The estimated coefficient of the error correction term is negative, less than unity and is highly significant. These results confirm the presence of a highly stable, long run relationship. It can be inferred that deviations from equilibrium in the short run is restored over the long run at 22% implying that the speed of adjustment in number of years is around 5years. The error correction framework shows a very predictable and analysable relationship given that it falls within unity (1). More so, it goes to confirm the long run elasticity of digital finance to the studied investment correlates.

Conclusion

This study was set to investigate the elasticity of digital finance to foreign investment correlates in Nigeria. The quest was triggered by the need to determine whether foreign flows act as enablers for the development of digital finance. Using web transaction value as a proxy for digital finance, it was found that foreign investment flows proxied by FDI, FPI and Loans act as drivers for digital finance. FPI and Loans were significant. Digital finance is promoting FPI and not FDI which is not healthy. For a developing country, investment in FPI may not be good. Focusing on investments that are less volatile should be the priority of policy makers. it has been pointed out that FDI are not only less volatile, but also more consistent with development objectives. Emphasis of the government should be on the policy measures that are likely to reduce the very high perceptions of risk and therefore rates of repatriation demanded by foreign investors.

The volatile nature of FPI should be of concern to policy makers given the incidence of global crisis. The financial crisis observed was remarkable in several developing countries. There were portfolio reversals as PFI were flowing out from developing countries instead of flowing in. This further reduced the positive contribution of FPI to nation building. What this implies is that due to the volatility nature of FPI, governments can scarcely predict how much capital is available for them to plan the economy. This is not a pleasant situation for many developing countries that are outspending, to attract such foreign investments. Considering the enormous incentives provided by developing countries, it is obvious that many developing countries are relying more on foreign capital relative to domestic capital for investment.

here is need for countries to have timely and accurate data on capital flows. This is in relation to the effect of the global financial crisis. Due to the volatility nature of foreign fund flows, policy measures to build a country's resilience to foreign capital related shocks must be given serious attention. Our research findings present the necessity to take additional steps towards more beneficial rules and regulations governing foreign inflows. Emphasis should be given to operations and exist strategy.

To attain an important objective of economic development. The onus is on policy makers to work towards a stable economic and political stability. Attention must be given to good governance, fiscal and monetary policies. Digital financing in all countries, and in particular the participation of developing countries in the global digital economy, calls for targeted investment policies. Policies that are geared towards attracting more of non-speculative investments of long term perspectives rather than short term speculative investments. This is one sure way of foreign capital inflows Providing financial stability in host country.

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