FINANCIAL CONDITIONS INDEX AND ECONOMIC PERFORMANCE IN NIGERIA

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Abstract

Motivated by the need to harness the various potentials in various indicators, the study constructs a financial conditions index. This is employed to predict the performance of the Nigerian economy over the period of 1990 to 2019. The study employed the principal component analysis and the Autoregressive Distributive Lag estimation to determine the influence of the financial conditions on economic performance. The constructed financial conditions index was the weighted average of treasury bills rate, the value of stocks traded, real effective exchange rate, credit to private sector ratio to GDP, and interest rate spread. The study observed stationarity of all employed variables and found statistical evidence that the financial conditions index lacks predictive power for future economic growth but has a negative and significant impact on the inflation rate. This, therefore, shows that in Nigeria, its financial condition has been inflation-targeting and has not been well-utilized in driving real economic growth. Overall, the study upholds a mixed effect of the financial condition index which on one hand shows an efficient market and on the other hand shows poor control and management of the various financial institutions in the nation based on its insignificant influence on the growth rate of the gross domestic product in Nigeria and its significant effect on the inflation level in Nigeria. In light of the observed findings, it was recommended that; monetary authorities should use a well-constructed financial conditions index as an indicator for monetary policy rather than the individual monetary or financial variables such as interest rate, exchange rate, stock prices, and bank balance sheets. The Nigerian economy needs to redefine its policy objectives and pursue an all-inclusive growth-oriented policy that would encourage the productive use of its financial resources and lead to higher economic growth. To this end, expansionary policies that would remove constraints in banks' balance sheets, as well as increase access to financial markets, should be pursued.
Keywords: Financial conditions index, economic growth, inflation, principal component analysis.

Introduction

The prediction and understanding of how the financial sector operations and the monetary policy shocks transmit to the real economy is an age-long issue and has continued to attract scholarly debate in both developing and developed countries (Ejem & Ogbonna, 2020). Monetary authorities and other policymakers regularly examine the monetary and financial conditions to examine the economic performance, using certain indexes, which aid policy decisions and direction. The primary main objective of the application of these indexes is to evaluate how they influence the macro-economic activities of a country. The 2008 financial crisis has buttressed the need to regularly evaluate and monitor the overall financial soundness and stability of a country. Some scholars have argued that warning signs existed before the crises, (Sanusi, 2011). They argued that lack of strong monitoring of the financial systems led to the 2008 financial crisis.

The financial crisis led to the collapse of large banking institutions hitherto considered too large to fail, large conglomerates, and other businesses all over the globe. Governments all over the world had to intervene with bail-out funds to financial institutions and large corporations to mitigate the effects of the crises on their financial markets and stimulate economic growth. The first signs of the impact of the global financial crises on African capital markets were witnessed with a decline in market capitalization. Nigeria lost about $15 Billion in the capital market in January 2009 from capital withdrawals by investors. The All Share Index lost over a total of 67% and the market capitalization dropped by over 50% in Nigeria by July 2008.

As a result of the huge negative impact of the global financial crisis, scholars have argued on the use of a broad range of financial conditions index which will incorporate different economic policy tools or indicators on the financial system of an economy. In light of this, the Financial Conditions Index has gained prominence following the 2007 international financial crisis. Thus, economic policymakers have formulated the financial conditions index. Financial conditions are the present state of financial variables that stimulus economic behavior and the future state of the economy, (Hatzious, et al, 2010). The Financial Conditions Index (FCI) is an index that is constructed based on the combination of monetary variables, currency prices, and asset prices.

Financial Conditions Indexes have been used to evaluate the current state of financial conditions and major economic policy decisions taken therefrom, (Duarte and Guillen, 2015; Osario et al., 2011; Vonen, 2011; Kara et al. 2012). Financial Conditions Index can provide timely information on real economic performance. The financial conditions Index can be deployed instead of the conventional indexes such as money supply and interest rate in evaluating the financial conditions and economic outlook of a country. The financial Conditions Index has the predictive ability on the overall performance of an economy. (Auer, 2017; Yau, 2019; Bulut, 2016). The financial Conditions Index forecasts the economic trend and it is a better measure of Gross Domestic Product (GDP) and the Consumer Price Index (CPI) than the single variables. (Debuque-Gonzales and Gochoco-Bautista, 2013).

From a review of related literature (Mohanty, 2013, Becketti & Morris, 1992; Wills & Coa, 2015), it can be observed that the majority of past studies investigates the relationship between financial condition index and economic performance mainly concentrating on developed economies. However, both experience and research prove that the financial depth of developing nations is growing and as such deserves an appraisal. Also, the

literature shows that no previous study measured economic growth using real GDP per capita, while estimating the weights used in constructing financial conditions indexes.

These are therefore good motivations to construct a financial conditions index for sub-Saharan African countries as well as examine the predictive ability for their future economic performance. This study, therefore, hopes to construct a financial conditions index for Nigeria to analyze the effect of the financial and monetary conditions on the real economy. Following this introduction, section two reviews some of the relevant theoretical and empirical literature on the issue, while section three underlying the methodology of the study. Section four presents the results and discussions. Section five concludes the study and offers some recommendations.

Literature Review
Theoretical Framework

Gurley and Shaw (1955) and Goldsmith (1969) were the precursors of the influence of the financial conditions on economic growth. Explicitly or implicitly, these authors found the idea that an efficient financial system activates economic growth while orienting it as explained by Taha, Anis, and Hassen (2013). In general, there are several channels through which financial development can affect economic growth (Levine, 1996; Pagano 1993). First, the financial sector promotes the accumulation of capital, which is an important condition for economic growth. In practice, this means that a more efficient financial system reduces the loss of resources required to allocate capital, i.e. lowers the transaction costs. Second, along with its effect on capital accumulation, there are several channels through which financial development can raise the productivity of capital.

These channels are related to the function of financial intermediaries: (i) to evaluate and select the most profitable investment projects; (ii) to provide liquidity, which creates incentives to invest a larger share of savings in more profitable long-term projects; and (iii) to provide a possibility for portfolio diversification, which allows individual agents to undertake riskier and more specialized investment projects as explained by Shahbaz, Van Hoang, Mahalik, and Roubaud (2017).

Building on the above premises, it should be observed that the relationship between the financial condition in an economy and economic performance has been an important topic of research debate for a long time. Theoretical explanations suggest that financial sector intermediary development stimulates economic growth by creating economic conditions that enhance efficiency in resource allocation (Levine, 2004). Building on this theoretical foundation, several empirical studies examined the relationship between financial sector development and economic growth (Nwani, Bassey, & Orie, 2016; Uddin, Rahman, & Quaosar, 2013; Espinoza, Fornari, & Lombardi, 2011; Anwar & Nguyen, 2009; Seetanah, 2008; Chang & Caudill, 2005). The results of most of these studies show that financial condition is a significant driver of economic growth.

Three major components of the financial intermediary system have been widely considered in these studies: the role of financial intermediaries in the mobilization of savings, the role of financial intermediaries in enhancing economic activities in the private sector, and the size of the financial intermediary system. According to Levine (1996), Levine (2004), and Beck, Maimbo, Faye, and Triki (2011) the growth-generating ability of every financial intermediary system depends significantly on how efficient the system could mobilize and allocate savings in the economy. By attracting deposits from various economic units in the economy and financing investment projects in the private sector, financial

intermediaries generate higher levels of economic growth, support firms that depend on external finance, and reduce the financing constraints of small- and medium-sized enterprises (Beck, Demirgug-Kunt, & Maksimovic, 2005; Beck & Demirguc-Kunt, 2006; Beck et al., 2011).

Even though the existence of a financial condition to economic performance relationship is generally recognized, the empirical results vary considerably across countries, depending on the institutional characteristics, market size, and the level of initial development as exposed by Soultanaeva (2013). Theoretical disagreements do exist about the role of financial conditions in economic performance as seen from different standpoints such as the Supply leading hypothesis, demand following hypothesis, bi-directional causality hypothesis, and no causality argument. In which some economists see the role as significant while others see it as minor.

The most skeptical view of the importance of financial conditions and growth can be found in papers written by Shan (2005) and Zang and Kim (2007). Based on Shan's variance decomposition analysis, there is little evidence that financial condition leads to economic growth in the eleven countries in his sample (from 1985 to 1998, quarterly data). While some argue that it facilitates the efficiency of the financial system (Gromb & Vayanos, 2010; Anad & Subrahmanyam, 2008), others have also argued that it is passive in nature and serves as a conduit through which monetary policy is effected (Benston & Smith. Jr; 1975) and contracts, not available in the financial market, are implemented (Shittu, 2012). Despite several empirical studies that test the validity of each of these conflicting views to clarify the financial condition-economic growth/performance relationship, there is, however, no consensus on the role of financial condition index in forecasting inflation and output growth across a multiplicity of developing African countries yet. Although, several studies provide evidence of a positive relationship between a country's economic growth and the condition of its financial markets.

The few researchers who observed and developed a unifying financial condition index did so in Europe (Hatzius, Hooper, Mishkin, Schoenholtz, & Watson, 2010), Asia (Zheng & Yu, 2014), American (Erik, Lombardi, Mihaljek, & Shin, 2019) and highly industrialized economies with varying indicators not accessible to developing nations like those in Sub-Saharan African economies with relatively shallow financial markets and indicators (example of these indicators are M3 and M4 are the broadest form of money supply, interest rate, price synchronicity, house price index, etc.). This, therefore, warrants a locally based evaluation on the subject matter.

Conceptual Framework

Financial conditions can be simply defined as the current state of financial variables that influence economic behavior and (thereby) the future state of the economy. A financial Conditions Index (FCI) summarizes the information about the future state of the economy contained in these current financial variables. Ideally, a Financial Conditions Index should measure financial shocks – exogenous shifts in financial conditions that influence or otherwise predict future economic activity. In theory, such financial variables may include anything that characterizes the supply or demand for financial instruments relevant to economic activity (Reinbold & Restrepo-Echavarria, 2017).

Relationship between Financial Condition and Economic Performance

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the accumulation of capital, which is an important condition for economic growth. In practice, this means that a more efficient financial system reduces the loss of resources required to allocate capital, i.e. lowers the transaction costs. Second, along with its effect on capital accumulation, there are several channels through which financial development can raise the productivity of capital. These channels are related to the function of financial intermediaries: (i) to evaluate and select the most potable investment projects; (ii) to provide liquidity, which creates incentives to invest a larger share of savings in more profitable long-term projects; and (iii) to provide a possibility for portfolio diversification, which allows individual agents to undertake riskier and more specialized investment projects as explained by Shahbaz, Van Hoang, Mahalik, and Roubaud (2017).

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Beginning with the studies of Bagehot (1873) and Schumpeter (1911, 1934), which stress the critical role of the financial system in economic growth, there have been numerous studies investigating the relationship between finance condition and economic performance; however, so far, there is no consensus on the types and basket of the index that can be universally applied. The views about the role of financial condition in its various index form in economic performance are conflicting. While some researchers believe that the financial condition index strongly affects economic performance, some do not. Four different views are summarized by Al-Yousif (2002). The first is the "supply-leading" view, according to which financial condition indexing has a positive effect on economic growth.

Supporters of this view argue that the financial condition of an economy contributes to economic growth by raising the efficiency of capital accumulation and, in turn, the marginal productivity of capital. The financial condition also raises the savings rate and, thus, the investment rate, which leads to economic growth. Some supporters of the "supply-leading" view are Hicks, (1969), Goldsmith (1969), McKinnon (1973), Shaw (1973), Greenwood and Jovanovic (1990), Bencivenga, Smith, and Starr (1995), Arestis et al., (2001), Christopoulos and Tsionas (2004), and Rioja and Neven (2004).

The second view, advanced by Robinson (1952), is the "demand-following" view, according to which, as the real side of the economy expands its demand for financial arrangements increases, and, hence, financial services grow. Robinson (1952) argues that financial condition follows economic growth, Patrick (1966) and Ireland (1994) give support for the "demand-following" view. Patrick (1966) shows financial condition as a consequence of high growth that demands more and better financial services.

The third view of the relationship between the financial conditions and economic performance states that the two variables have bi-directional causality, Demetriades, and Hussein (1996) perform causality tests between financial condition and real Gross Domestic Product (GDP) using a time-series approach.

They find bi-directional causality between the two variables; Luintel and Khan (1999) also find evidence of bi-directional causality between financial conditions and economic performance. Greenwood and Smith (1997) present two models with endogenous market formation to analyze this relationship. They argue that markets promote growth and that growth, in turn, encourages the formation of new markets, Their model stresses three points: (1) market formation is endogenous, and market formation costs will require that market development follows some period of real development; (2) market formation enhances growth by promoting the capital allocation; (3) competition among potential providers of market services leads markets to be efficient. Finally, Lucas (1988) advanced a fourth view, which states that there is no causal relationship between the financial condition and economic growth, Lucas (1988) asserted that the role of the financial system in economic growth is "over-stressed."

Empirical Review

Yau (2019), constructed a simple financial conditions index for Hong Kong from 1996 to 2018, using the PCA on data on 5 finance-related indicators, namely 3-month HIBOR-Exchange Fund Bill, the 3-month HIBOR-US Treasury Bill spread, the Hong Kong Dollar 12 month forward rate, the HIS Volatility Index (VHSI) and the Kansas City Financial Stress Index to incorporate international financial conditions. He concluded that the simple financial conditions index was able to provide useful information on Hong Kong's financial conditions especially the two episodes of severe financial dislocation during the Asian financial crisis of the late 1990 and the 2008 global financial crisis.

Gurrib (2018) evaluated the influence of a unified financial conditions index on the economic performance of the United States of America. Using weekly data over 1993-2018, the study proposes a unified financial condition index (UFCI) using principal component analysis and tests its predictability over the most active currency pairs. The index captures 78% of the variability inherent in St Louis Federal Reserve Financial Stress Index, the Chicago Fed National Financial Condition Index, and the Adjusted National Financial Condition Index. A significant p-value of UFCI, homoscedasticity, and relatively stable root mean squared errors was observed only for EUR/USD. Mixed findings found as lags were increased suggest a weak relationship between UFCI and foreign currencies. This could be explained by less volatile variables inherent in the FCIs compared to the more volatile USD-based foreign currency pairs.

Arregui, et al., (2018) examined the evolving importance of common global components underlying domestic financial conditions. They employed the VAR models to construct the financial conditions index for the periods 2001 to 2007 and 2010 to 2016. The result showed that though domestic financial conditions respond faster and more strongly

to financial shocks than changes in the domestic monetary policy stance, but implementing timely and effective policy reactions may be the challenge.

Utile, Okwori, and Ikpambese (2018) investigated the effect of interest rates on the economic growth of the Nigerian economy. They analyzed data obtained from the statistical bulletin of the Central Bank of Nigeria from 1980 to 2016 using multiple regression techniques and the results interest rate has a negative and insignificant relationship with GDP.

Haruna (2017), empirically investigated interest rate spread in Nigeria from 1986 to 2005 using data from banks' financial statements and Central Bank of Nigeria annual reports. The study adopted the Augmented Dickey-Fuller test and the results indicated the banking industry is not efficient or competitive, and there is a disconnect between the growth of the financial sector, as such the long term growth of the economy will be affected by the high-interest spread.

Bakar and Badrudin (2017) constructed a financial conditions index for Malaysia. They utilized the Principal Component Analysis method on data from the capital market, banking system, and the foreign exchange market from the first quarter of 1997 to the third quarter of 2017. They concluded that the financial conditions index reflects the overall enabling conditions for future economic activity, and they, therefore, suggest that it could provide complementary information about future economic activity. It was recommended in the study that proper monetary and fiscal policies should be implemented to ensure a positive benefit of financial condition at all times.

Auer (2017) built a financial conditions index for the Central and Eastern European economies from 2001 to 2016 using the EM algorithm. The findings of the study support the narrative that all three economies enjoyed accommodative financial conditions until 2008 after joining the European Union. However, the Czech Republic and Hungary were more exposed than Poland to the spillover effects from the global financial crisis and Euro sovereign debt crisis.

Yaaba, et al., (2017) constructed a financial conditions index for Nigeria from 2004 to 2013 to determine the influence of both domestic and external macroeconomic factors on monetary policy formulation. They utilized the Autoregressive Distributed Lag (ARDL) to analyze data obtained from the Statistical Bulletin of the Central Bank of Nigeria, the annual abstract of statistics of the National Bureau of Statistics (NBS), and National Economic Accounts of the Bureau of Economic Analysis. The results show the relative importance of FCI in gauging the monetary policy of the Central Bank of Nigeria and its effect on the Nigerian economy.

Bulut (2016) examined the causal relationship between financial conditions and inflation in Turkey. The study employed quarterly data from quarter one of 2005 to quarter three of 2015. The results showed that the financial conditions index has predictive power on inflation. Therefore, financial conditions should be carefully monitored to achieve inflation targets.

Duarte and Guillen (2015) constructed a financial conditions index for the Brazilian economy. They employed the empirical technique proposed by Hatzius et al., (20110) to evaluate a database comprising of 43 financial indicators. They concluded from the finding of the study that the financial conditions index can improve the Brazilian GDP forecasts by up to 20%. However, the financial conditions index was unable to forecast industrial production and labor market indicators.

Charleroy and Stemmer (2014) formulated a financial conditions index to assess the impact of financial developments on the macroeconomic conditions for emerging markets. The study utilized the Vector Auto-Regressive method on monthly time series data from 2001 to 2013. The results gave insight into the triggers of the financial crisis and captured both domestic developments and the spillover effects from the global crises. Further, it buttressed the predictability of the financial conditions index on the financial variables on the macroeconomic performance.

Zheng and Yu (2014) examined the influence of the financial conditions index (FCI) as measured using money supply, interest rate, exchange rate, stock price, and house price are selected as the variables on the economic performance of China. The study employs the Principal Component Analysis (PCI) and correlation test as predicated on the dynamic factor modeling. The results indicate that FCI can reflect China's financial conditions and can be a crucial financial conditions indicator as well; FCI can also well forecast the overall economic trend, and it is a better leading indicator of GDP and CPI than single variables.

Roy, Biswas, and Sinha (2014) constructed a monthly financial conditions index composite indicator to explore the relationship between financial conditions and economic activity for India from April 2004 to March 2014. The study adopted the principal components analysis (PCA) method on secondary data from the Database of Indian Economy (DBIE) and the Reserve Bank of India. The results showed the FCI captured early movement in financial stress in the economy.

Debuque-Gonzales and Gochoco-Bautista (2013) constructed financial conditions indexes for six Asian economies, namely, Hong Kong, China, Japan, Republic of Korea, Malaysia, and Singapore. They used a Principal Component Analysis (PCA) methodology by Hatzius et al., (2010) and quarterly data from 1995 to 2011. They discovered from the results that the predictive power of the constructed financial conditions indexes is higher than that of benchmark AR models and they outperform single financial indicators.

Brave and Butters (2012) constructed a financial conditions index to diagnose the financial system. They utilized the Receiver Operating Characteristics (ROC) Curve Analysis and the National Financial Conditions Index (NFCI) constructed by the Federal Reserve Bank of Chicago to analyze information on the incidence of U.S. financial crises. The results indicate that the NFCI) is a highly predictive and robust indicator of financial stress up to one year, but for longer periods, proposed an alternative sub-index of the NFCI to capture the relationship between no-financial leverage, financial stress, and economic activity.

Gumata, Klein, and Ndou (2012) constructed a financial conditions index for South Africa. The study applied two alternative approaches (principal components analysis and Kalman filter) which identify an unobservable common factor from a group of external and domestic indicators for the first quarter of 1999 to the fourth quarter of 2011. They concluded that the alternative FCIs share a similar path over time and seem to possess a predictive ability for the near-term GDP growth, up to four quarters.

Beaton, Lalonde, and Luu (2009). They developed two growth financial conditions indexes for the United States economy. The study used a structural vector error-correction model (SVECM) on data from the third quarter of 1979 to the first quarter of 2009. The results suggest that the impact of financial shocks on the real economy may be amplified in the face of higher real interest rates since policy interest rates were at a lower bound and credit and quantitative easing policies may not be as efficient in stimulating demand as traditional rate policies.

Methodology

This study adopts the ex-post factor deductive design. This entails the use of secondary data gotten from the central bank of Nigeria statistical bulletin and the World Bank online repository. The sample coverage period is from 1990 to 2018. To construct the financial conditions index, the study employs variables such as the riskless interest rate (treasury bills rate), value of stocks traded, real effective exchange rate, interest rate spread, credit to the private sector which is used to formulate the financial condition index while the study employs the inflation rate and gross domestic product growth rate. This is in light of the weighted sum approach of Osorio, Unsal, and Pongsaparn (2011), who built on the earlier works of Guichard and Turner (2008) and Swiston (2008), adopted this approach. This is represented below mathematically as follows;

$$FCI = \sum_{j=1}^{n} w_j \left(x_{j,t} - \bar{x}_j \right) \tag{1}$$

Where

w_j = weight attached to each financial variable x_j in model (3.1) obtained as the principal component analysis beta associated with x_j, and $\bar{x}_j$ = average of x_j over the sample period (2009 to 2018). The attached weights show the importance of how each financial conditions index affects the economic performance.

Method of Data Analysis

To evaluate the objectives of this study, the following analytical tools are employed:

Stationarity Tests

It is crucial to examine the stationarity qualities of time series data in order to avoid the problem of spurious estimations. In this sense, the Augmented Dick-Fuller (ADF) test is employed. For decision, the ADF statistics for the respective study variables should on absolute terms be more than the corresponding Mackinnon critical values at 1%, 5%, and 10% levels of significance for the null hypothesis of non-stationarity to be rejected. Failure to attain stationarity of the variables would provide for subsequent differencing for stationarity to be effected.

Auto Regressive Distributive Lag

This is a model as developed by Pesaran *et al.* (2001) in order to incorporate I(0) and I(1). The assumption of this model stems from the fact that; it is applicable to only variables stationary at level I(O) or first difference I(1). And it is most suitable for trend whose interval does not reach 30.

Auto Regressive Distributive Lag Error Correction Estimation Test

The Error Correction test aims to ascertain the nature of long run sensitivities of a given study's dependent variable to changes in each of the independent variables. Also, it provides the relevant speed at which the dependent time series variable adjusts back to equilibrium within the year following short run shocks in the set of independent variables. For decision purposes, the coefficients of the independent variables are expected to be significant at 5% level for the null hypothesis of no long run sensitivity to be rejected. Further, the ECM coefficient is expected to be significant at 0.05 levels and also, negatively signed for the null hypothesis of no long run proper fit to be rejected.

Model Specification

The general functional form of the model is stated as follows:

GDPGR	=	f (FCI)	2
INFL	=	f (FCI)	3

Mathematical form;

GDPGR=	f(FCI)		4
INFL	=	f(FCI)	5

Functional Form;

$GDPGR_t$	=	$\beta_0 + \beta_1 FCI_t + \mu_t$	6
$INFL_t$	=	$\lambda_0 + \lambda_1 FCI_t + \mu_t$	7

Where:

INFL = Inflation
GDPG = Gross domestic product growth rate
FCI = Financial Condition index

Apriori Expectation

Based on the underlying theory of the study, a positive relationship is expected between the financial condition and performance of an economy. This shows that an increase in financial condition (index) would lead to an increase in economic performance via efficient mobilization of funds from deficit economic unit to the surplus economic unit which would spur productivity, increase employment and translate to a positive performance of the economy within the relevant range. Mathematically, this can be expressed as; $\beta_2/\lambda_2 > 0$

Results and Discussion

The employed data of the study is presented below as follows**.**

Table 1: Monetary Policy Rate (MPR), Gross Domestic Product Per Capita Growth Rate (GDPPCGR), Gross Domestic Product Growth Rate (GDPGR), Treasury Bill Rate (TBR), Inflation Rate (INFL), Real Effective Exchange Rate (REER), Value Of Stocks Traded (VST), Credit To Private Sector Ratio (CPSR) and Gross Domestic Product Per Capita (GDPPC) in Nigeria from 2009 to 2018.

YEAR	INFL	GDPGR	GDPPC	FCI	MPR	TBR	REER	PLR	VST	CPSR
1990	3.61	11.63	5244.85	-1.12909	18.50	17.50	8.04	4.45	22.23	6.71
1991	22.96	-0.55	6099.12	-.98226	15.50	15.00	9.91	5.68	33.88	6.94
1992	48.80	2.19	9077.92	-1.52681	17.50	21.00	17.30	5.27	47.93	6.39
1993	61.26	1.57	12252.33	-2.11339	26.00	26.90	22.05	5.31	66.81	10.10
1994	76.76	0.26	16732.00	-1.13699	13.50	12.50	21.89	5.41	95.42	8.14
1995	51.59	1.87	26804.57	-.93244	13.50	12.50	21.89	7.61	220.36	6.22
1996	14.31	4.05	34128.37	-.61764	13.50	12.25	21.89	8.01	302.58	6.31
1997	10.21	2.89	36218.66	-.57066	13.50	12.00	21.89	6.78	278.71	7.69
1998	11.91	2.50	39429.14	-.66264	13.50	12.95	21.89	5.60	256.90	7.67
1999	0.22	0.52	44477.43	-.76927	18.00	17.00	92.69	5.54	294.10	8.12
2000	14.53	5.52	56374.08	-.43733	14.00	12.00	102.11	6.76	466.06	7.69
2001	16.49	6.67	64832.77	-.66510	20.50	12.95	111.94	7.97	648.45	9.40
2002	12.17	14.60	88074.47	-.74036	16.50	18.88	120.97	6.61	748.70	8.21
2003	23.81	9.50	100790.40	-.44689	15.00	15.02	129.36	9.96	1324.90	8.24
2004	10.01	10.44	127932.90	-.23528	15.00	14.21	133.50	11.12	1925.94	8.21
2005	11.57	7.01	160285.50	.16501	13.00	7.00	132.15	11.33	2523.49	8.26
2006	8.55	6.73	200979.20	.43290	10.00	8.80	128.65	14.75	4227.13	7.99
2007	6.56	7.32	225352.10	1.45989	9.50	6.91	125.83	30.85	10180.29	11.12
2008	15.06	7.20	260449.40	1.00595	9.75	7.03	118.57	17.77	6957.45	17.67

2009	13.93	8.35	286819.50	1.18437	6.00	3.72	148.88	11.27	4989.39	20.55
2010	11.80	9.54	344386.80	1.28956	6.25	5.60	150.30	14.49	7913.75	18.60
2011	10.28	5.31	386674.40	.55900	12.00	11.16	153.86	10.37	6532.58	16.93
2012	11.98	4.21	428661.70	.76247	12.00	13.60	157.50	12.51	8974.45	20.43
2013	7.96	5.49	466117.00	1.21818	12.00	10.42	157.31	16.51	13226.00	19.67
2014	7.98	6.22	504609.30	.89565	13.00	12.00	158.55	12.89	11477.66	19.24
2015	9.55	2.79	519616.20	1.03555	11.00	9.14	193.28	10.46	9850.61	19.84
2016	18.55	-1.58	545672.80	.85847	14.00	10.75	253.49	9.11	9246.92	20.77
2017	15.37	0.82	595703.50	1.11932	14.00	13.99	305.79	11.97	13609.47	19.43
2018	11.40	1.93	652266.80	.97982	14.00	12.18	306.08	9.18	11720.72	17.63

Source: Central bank of Nigeria, The World Bank Repository.

Due to the small sample size of the employed variables, the study deploys the Auto Regressive Distributive Lag. The model was also coerced into a more fitting linear relationship by employing natural logarithm variants of the study variables. This resulted in significant estimates for Stationarity, Auto Regressive Distributive Lag, and Error Correction estimation tests as duly reported hereunder. Accordingly, the results of the tests executed are therefore duly presented following the underlying study period for clarity purposes.

Presentation of the Stationarity Test Results:
The stationarity test results for are presented in table 2 below.

Table 2: Presentation of Stationary Test Result:

	ADF CRITICAL VALUE	Mackinnon's critical values at			Order of Integration	Probability
		1%	5%	10%		
GDPGR	-3.987862	-3.788030	-3.012363	-2.646119	I(1)	0.0092
INFL	-6.606346	-3.788030	-3.012363	-2.646119	I(1)	0.0000
FCI	-5.164320	-3.737853	-2.991878	-2.635542	I(1)	0.0005

Source: *Extracts from E-views 12.0 output*

Table 2 above shows the difficulty of employed variables achieving stationarity at level. This has led to evaluations of stationarity at first difference. The employed variables were found to be significantly stationary at the first difference. This stationarity pervades the 10%, 5%, and 1% significance level. After having shown stationarity, the study proceeds to the Bond co-integration, otherwise known as the Auto Regressive Distributive Lag (ARDL).

Lag Length Selection
Due to the fact that revenues of previous period may be expended in future periods, the study therefore decides to know the most suitable lag for the time series. In light of this, the study proceeds to evaluate the lag length selection criteria.

Table 3: Lag length Selection Criteria output
VAR Lag Order Selection Criteria
Endogenous variables: GDPGR / INFL
Exogenous variables: C FCI

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-149.2561	NA	88441.98	14.20510	14.55225	14.28688
1	-148.5059	0.954767*	91564.50*	14.22781*	14.62455*	14.32127*

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion

SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion
Source: Extracts from E-views 12.0 output

Looking at the SC values in table 3 above, it can be observed that a maximum lag of 1 is suggested for both models. (The AIC values suggest that 1 lags of FCI may be appropriate). In light of the above table, the study will thus proceed to use the first lag (1) of all employed variables.

Auto Regressive Distributive Lag (ARDL) short run

Based on shorter series interval, the study undertakes the Auto Regressive Distributive Lag (ARDL) test as presented below as follows:

Table 4: Presentation of Auto Regressive Distributive Lag (ARDL)
Dependent Variable: LN(GDPGR)
Method: ARDL
Fixed regressors: C

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LN(FCI(-1))	0.742144	0.571400	1.298818	0.2263
C	-267.8040	149.9480	-1.785979	0.1078
R-squared	0.894058	Mean dependent var		1857.474
Adjusted R-squared	0.886136	S.D. dependent var		1502.637
Prob(F-statistic)	0.000000			

*Note: p-values and any subsequent tests do not account for model Selection.
Dependent Variable: LN(INFL)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LN(FCI)	0.027301	0.086610	3.152425	0.0082
LN(FCI(-1))	9.07E-05	4.36E-05	2.082818	0.0450
C	-873,3762	526.2735	-1.947212	0.0936
R-squared	0.836121	Mean dependent var		1857.474
Adjusted R-squared	0.803852	S.D. dependent var		382.3717
F-statistic	374.2751	Durbin-Watson stat		1.975947
Prob(F-statistic)	0.000000			

*Note: p-values and any subsequent tests do not account for model Selection.
Source: Extracts from E-views 12.0 output

The above ARDL output summary for both models shows that; employed predictor variables i.e. the financial conditions index jointly account for up to 89.41% and 83.6%of variations in the performance of the economy i.e. growth domestic product growth rate and inflation respectively. Following this, the F-statistics shows a good fit in the model and gives room for other tests as presented as follows.

Bonds Co-integration Test

To evaluate the long run relationship amongst employed ARDL variables, the bond test is carried out as follows.

Table 4: Presentation of ARDL Bond Test for Long run relationship identification

ARDL Bounds Test
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	4.947086/5.8432 55	6

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	2.12	3.23
5%	2.45	3.61
2.5%	2.75	3.99
1%	3.15	4.43

Source: *Extracts from E-views 12.0 output*

The F-statistics value of 4.947086 and 5.843255 are seen to be greater that all the critical value bonds. This goes to show that there exists significant long run relationship between employed variables in both models. The study therefore proceeds to the error correction model.

Autoregressive Lag Distributive Error Correction Estimate

To adjust for disequilibrium between the long and short run estimate, the study proceeds to further evaluate the co-integration and long run form in light of the error correction term (CointEq(-1))

Table 5: Presentation of ARDL Error Correction Estimate

ARDL Cointegrating And Long Run Form
Dependent Variable: GDPGR

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PPT)	2.501E-05	1.00E-05	2.489520	0.0242
CointEq(-1)	-0.257856	0.071400	-3.611430	0.0025

Cointeq = FCI - (-0.0001*PPT + 0.0054*PIT + 0.0005*CIT + 0.0028 *CGT + 0.0084*CED -12.3304*VAT -1038.5803)

Long Run Coefficients
ARDL Cointegrating And Long Run Form

Dependent Variable: INFL

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PIT)	-0.005363	0.004107	-2.332950	0.0321
CointEq(-1)	-0.000141	6.55E-05	-2.155617	0.0495

Source: *Extracts from E-views 12.0 output*

In light of the existence of a long-run relationship as seen by the Bond test above, it can be further reckoned that the disequilibrium between the long and short-run ARDL model can be adjusted for back by approximately -0.257856 and -0.000141 in both models. This shows that there would be a 25.79 and 0.141 percent adjustment back to equilibrium in both models. In light of the long-run coefficients, it can be seen that financial condition does not significantly influence the growth rate of gross domestic product but has a significant influence on the inflation rate.

The first model result is contrary to our apriori expectation; our results show that the financial conditions index has no significant effect on the real GDP growth rate. The positive value associated with this coefficient indicates that holding the growth rate as well as the current level of inflation rate constant, financial conditions that are looser than average would not affect the real economic growth rate. Thus, there is no sufficient evidence to reject the specified null hypothesis. This implies that the financial conditions index has no predictive power for future economic growth rates in Nigeria. This contradicts supply leading theory and several empirical studies including Zheng and Yu (2014), Duarte and Guillen (2015), and Sahoo (2017).

Consistent with our expectation, apriori, our results show that the financial conditions index has a negative and statistically significant effect on the inflation rate. This implies that the financial conditions index has predictive power for future inflation in Nigeria. This is consistent with previous studies of Bakar and Badrudin (2017), who found that the financial conditions index provides complementary information about future economic activity, and Kabundi and Mbelu (2017), who find that time-varying financial conditions index estimated via vector autoregressive model can predict inflation rate in South Africa. Our finding is also consistent with Bulut (2016) and Chow (2013). Both authors find that the financial conditions index can help predict the future direction of the inflation rate.

Overall, the financial condition has a mixed effect on the performance of the economy. These findings support studies arguing that economic growth and financial conditions evolve independently. As a result, caution must be exercised in making general conclusions about the causal relationship between financial conditions/development and economic growth. The study, therefore, buttresses the studies of Allen and Gale (2000), DemirgurcKunt and Levine (2001), Quah (1993), Casselli, Esquivel, and Lefort (1996), Ozturk (2008), Atje and Jovanovic (1993), Apergis and Levine (2007) who similarly observed that there was no long-run relationship between financial conditions and economic performance. Atje and Jovanovic (1993) who specifically examined the effect of certain elements of the financial conditions index on economic performance could not establish a significant relationship between both variables.

Conclusions and Recommendations

This study investigates the effect of the financial conditions index on economic performance in Nigeria using the principal component analysis and the ARDL model. The constructed financial conditions index were the weighted average of treasury bills rate, the value of stocks traded, real effective exchange rate, credit to private sector ratio to GDP, and interest rate spread, with the weights being the principal component factors of the relative impact of these variables on real GDP per capita. In the long run, the study found strong evidence that the financial conditions index lacks predictive power for future economic growth but has a negative and significant impact on the inflation rate. Thus, we conclude that in Nigeria, the financial condition has been inflation-targeting and has not been well-utilized in driving real economic growth.

Overall, the study upholds a mixed effect of the financial condition index which on one hand shows an efficient market and on the other hand shows poor control and management of the various financial institutions in the nation based on its insignificant influence on the growth rate of the gross domestic product in Nigeria and its significant effect on the inflation level in Nigeria. In light of the observed findings, it is recommended that; monetary authorities should use a well-constructed financial conditions index as an indicator for monetary policy rather than the individual monetary or financial variables such as interest rate, exchange rate, stock prices, and bank balance sheets. The Nigerian economy needs to redefine its policy objectives and pursue an all-inclusive growth-oriented policy that would encourage the productive use of its financial resources and lead to higher economic growth. To this end, expansionary policies that would remove constraints in banks' balance sheets, as well as increase access to financial markets, should be pursued.

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