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RESEARCH ARTICLE

IMPACT OF THE MODIFIED INTEREST RATE LIBERALIZATION THEORY ON ECONOMIC GROWTH: THE NIGERIAN CASE

[1]Philips O. O. Nto and *[2]Okore Amah Okore

[1]Michael Okpara University of Agriculture, Umudike, Umuahia, Nigeria
[2]Department of Banking and Finance, University of Nigeria, Enugu Campus, Nigeria

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ABSTRACT

This study examines the modified interest rate liberalization theory and economic growth in Nigeria. The objective of the study is to determine the impact of the modified interest rate liberalization on savings, investment and economic growth in Nigeria. The period of study covers between 1987 and 2011. Interest rate used is the commercial bank deposit and lending rate. The technique of analysis is the Ordinary Least Square Method using the E-view statistical software. The study reveals that an increase in interest rate following proper liberalization has the tendency of enhancing economic growth. Therefore, the study recommends a shift of emphasis from why and what to liberalize to how to liberalize, in other to achieve the full benefit of liberalization.

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INTRODUCTION

Financial systems play an important role in economic development and growth of any country. The financial sector forms an important link between a country's macroeconomic policy and the rest of the economy. Its basic role in development and growth is resource mobilization and allocation among productive sectors through financial intermediation, a large scale specialized function performed by specialized financial institutions and their agents. They attract funds from savers in the surplus sector and channel these to borrowers for purposes of profitable investment. A repressed financial system fragments domestic capital market with adverse effects on the quality and quantity of real capital accumulation. The adoption of financial liberalization under these circumstances has been suggested in order to enhance economic growth, a suggestion which many African countries have implemented in various degrees, (Inanga and Ekpenyong). According to the financial liberalization theory, financial liberalization refers to the elimination of credit controls, deregulation of interest rates, easing of entry into the financial services industry, development of capital markets, increased prudential regulation and supervision and liberalization of international capital flows. Thus, in a liberalized economy, financial activities are controlled by the forces of demand and supply. The intellectual platform for financial liberalization in developing countries was provided by the seminar works of Mckinnon (1973) and Shaw (1973). They were of the view that interest rate liberalization causes interest rate to rise, thereby increasing savings and investment (see Onwumere, Okore and Imo, 2012). Reinhart and Tokatlids (2005), are of the view that, the impact of changes in real interest rates on savings, investment and economic growth is a central issue in macroeconomics. Not surprising, the debate on the relative merits of domestic and external financial liberalization has a long history. McKinnon (1973) and Shaw (1973), argued that, financial liberalization would lead to higher levels of investment and output growth. Also, liberalization would channel funds to more productive projects. An increase in real interest rates following liberalization would encourage savings and expand the supply of credit available to domestic investors, thereby enabling the economy to grow more quickly. According to Caprio, etal (1999), interest rate liberalization affects both the level and the dynamics of interest rates. The strength of these effects depends in part on the evolution of competition in the financial system; this in turn depends not only on other regulatory changes but is strongly influenced in its turn by interest rate developments. Since the introduction of the financial liberalization concept in the 1970s, many countries such as Angola, Burundi, Congo, Cote d'Ivoire, Gambia, Ghana, Kenya, Madagascar, Malawi, Mozambique, Nigeria, Rwanda, Tanzania, Zambia, Zimbabwe, India, China, Turkey, etc. have made attempts at liberalizing their financial sectors. Evidence on the basic McKinnon and Shaw postulation that higher interest rates will engender higher savings has been mixed, mirroring the theoretical ambiguity of the impact of interest rate changes on savings and economic growth.

For instance, Fry (1978) found that although higher interest rates in Nepal following liberalization triggered a change in the composition of the money stock, currency fell relative to deposits; there was a sharp contraction in both private sector demand for credit and the volume of investment. However, using pooled time-series data to estimate national savings functions for fourteen (14) Asian developing countries, Fry (1988) found that the real deposit rate of interest exerts a positive and significant effect on national savings. The 1980s witnessed a widespread disenchantment with the financial liberalization theory. The traumatic experiences of the Southern Cone

***Corresponding author: Okore Amah Okore,** *Department of Banking and Finance, University of Nigeria, Enugu Campus, Nigeria.*

countries of Latin America plus similar tales of woe out of Asia combined to dampen the enthusiasm of policy-makers and academic economists alike about financial liberalization. It slowly became clear that financial liberalization possessed substantial capabilities to induce financial instability. In response to this state of affairs, there was a shift of emphasis in the literature from why and what to liberalize to how to liberalize. Reformists realized that the presumed benefits of liberalization were by no means automatic and that financial reforms need to be properly managed in order to avoid financial crisis. There emerged new policy prescriptions on pre-requisites that have to be observed before financial liberalization commences and on the proper sequencing of liberalization policies (see World Bank, 1989). The shift of emphasis from why and what to liberalize to how to liberalize is what this study refers to as the modified interest rate liberalization theory. This study is an attempt to contribute to existing literature on the modified interest rate liberalization and economic growth in Nigeria. The objective of the study is to determine the impact of interest rate liberalization on savings, investment and economic growth in Nigeria. The paper is divided into five sections. Section one is the introduction. Section two is a review of related literature. Section three presents our methodology. Section four contains the empirical analysis while section five shows our conclusion and recommendation.

Literature Review

Interest Rate Liberalization

Interest rates are the rental payments for the use of credit by borrowers or the return for parting with liquidity by lenders. In general, interest rates in the financial sector are categorized into two: deposit and lending rates. Deposit rates are paid on savings and time deposits of different maturities. Lending rates are interest rates charged on loans to customers and vary according to perceived risks, the duration of the loans, the cost of funds to the lending institution and the expected margin. Mckinnon and Shaw were of the view that interest rate liberalization causes interest rate to rise, thereby increasing savings, investment and economic growth. In recent years, many developing and transition countries have allowed market forces to play a greater role in the allocation of financial resources. In the financial sector, this means liberalizing interest rates so that they are allowed to be set by the market, and developing financial markets so that credit can be allocated more efficiently. According to Mehran and Laurens (1997), although each country must design its own blueprint for financial reform, some general principles seem to be universally applicable, at least in countries where policymakers have some control over the liberalization process. First, policymakers need to decide when to start liberalizing interest rates and how fast to move. In making this decision, it is important to consider how far advanced the country is in reforming the state enterprise sector and in establishing a "credit culture" – that is, the extent to which banks have become accustomed to using market principles in assessing credit risks. Second, they need to determine the appropriate sequencing of liberalization – the order in which interest rates on different financial instruments can be freed without threatening the health of the country's banking system. Third, the central bank needs to develop a strategy for conducting monetary policy within the framework of a liberalized financial system. To allow market forces to determine the allocation of financial resources, countries need to develop an efficient money market. And, policymakers need to be prepared for the financial innovations that will inevitably follow liberalization.

Nigerian Experience with Interest Rate Liberalization

In August, 1987 the CBN liberalized the interest rate regime and adopted the policy of fixing only its minimum rediscount rate, now monetary policy rate to indicate the desired direction of interest rate. This was modified in 1989, when the CBN issued further directives on the required spreads between deposit and lending rates. In 1991, the government prescribed a maximum margin between each bank's average cost of funds and its maximum lending rates. Later, the CBN prescribed savings deposit rate and a maximum lending rate. Partial deregulation was, however, restored in 1992 when financial institutions were required to only maintain a specified spread between their average cost of funds and maximum lending rates. The removal of the maximum lending rate ceiling in 1993 saw interest rates rising to unprecedented levels in sympathy with rising inflation rate which rendered banks' high lending rates negative in real terms. In 1994, direct interest rate controls were restored. As these and other controls introduced in 1994 and 1995 had negative economic effects, total deregulation of interest rates was again adopted in October, 1996, CBN (2010). Presently, interest rates in Nigeria is partially deregulated. The CBN through the Monetary Policy Committee prescribes the monetary policy rate, minimum deposit rate, minimum lending rate and a maximum lending rate

Some Other Countries Experience With Liberalization

Williamson and Mahar (1998) surveyed the effects of financial liberalization in 34 developing and industrial countries, summarizing the outcome of liberalization in seven key areas as follows: i) liberalization in many cases changed the sectoral allocation of credit, although there was no systematic pattern; sectors that lost in some countries gained in others; ii) there is some evidence that the efficiency of credit allocation improved although the evidence is not overwhelming; iii) financial depth as measured by the ratio of broad money to GDP rose in most of the countries surveyed; iv) there is mixed evidence on the response of saving to liberalization, with saving rising in a few countries (e.g. Egypt) and falling in many others due to a post-reform consumption boom (Mexico and Thailand); v) mixed pattern of interest rates post-liberalization with rates increasing significantly in many countries and falling in a few; most developing countries show increases in rates and the only consistent evidence is that post-liberalization rates were almost always positive in real terms; vi) most countries in the sample experienced financial crises following liberalization with many experiencing more than one crises (only Britain and Singapore escaped); vii) there is no evidence that liberalization resulted in the loss of monetary control in the sampled countries.

One interesting finding by Williamson and Mahar was that the pace of reforms appears to have little connection with whether crisis occurred or not. The authors found that crisis occurred in countries that proceeded slowly as well as in those that adopted the "big bang" approach. The same goes for pre-reform macro-economic conditions.
In a statistical review of money market and bank interest rates in developing countries following liberalization, Honohan (2001) found evidence of increased levels and volatility of both nominal and real money market rates, especially t-bill rates and bank spreads. He attributed these trends to the fact that these rates were the most repressed under the pre-liberalization regime, thereby showing the greatest increase as liberalization progressed. Interest spreads have remained much higher in developing countries (compared to developed), perhaps due to the lower levels of competition and higher risks of lending in these economies. These trends in nominal and real rates have had substantial redistribution effects, shifting rents from the public sector and hitherto preferred borrowers. Many developing countries implemented financial reform strategies as part of wider World Bank-IMF Structural Adjustment Programs. Cull (2001) reviewed the World Bank's experience with providing support to financial sector reforms by examining Bank financial-sector lending operations from 1985-1996. These loans were mainly directed at the implementation of far-reaching financial sector reforms, including interest rate and credit deregulation, capital account liberalization, bank privatization, prudential regulation and so forth. He found that countries with relatively underdeveloped financial sectors have experienced more sector growth in the three (3) years after the inception of a Bank financial sector operation. This suggests that

initial financial sector conditions and country characteristics are important determinants of success of financial reform operations, more important than loan characteristics. Other factors contributing to success include relatively low inflation and large population size, indicating that the policy environment and the potential for financial growth -high population/low financial development also matter. Perhaps most importantly, there was evidence that financial reform was accompanied by increased financial sector instability, highlighting the need for strengthening the regulatory and supervisory framework as the financial system develops. Cho and Khatkhate (1989) detailed the deterioration of bank portfolios in the Phillipines. As in Turkey, non-performing loans were traced to the combination of high real lending rates with high debt-to-asset ratios in the non-financial corporate sector. Also focusing on the destabilizing impact of financial reforms in the Philippines over the 1970s and the 1980s, Vos (1997) pointed to the interaction of macro-imbalances and institutional weaknesses as key causes of the failure of reforms. He concluded that financial reforms did not succeed due to the high degree of concentration and segmentation of the Philippine financial system and perhaps more importantly, the commencement of reforms at a time when the financial system was already under stress and the economy facing substantial external shocks. He concluded that the proper ordering and coordination of financial reforms are critical to avoiding subsequent upheavals. Cho and Khatkhate (1989) however report more successful experiences in Malaysia, Korea, Sri Lanka and Indonesia where liberalization was slower and more cautious. This assessment has also been corroborated by Yusof, et al (1994) for Malaysia, Nam (1994) for Korea, and Chant and Pangestu (1994) for Indonesia.

Strong bank regulation and supervision plus the attainment of macroeconomic stability enabled Malaysia to escape the adverse consequences of rapid financial liberalization. The banking system was largely free of delinquent loans and the corporate sector was strong. The removal of interest rate ceilings therefore did not lead to rates rising to risky levels, probably because frequent adjustments of rates were already taking place prior to full liberalization. In Korea, liberalization was undertaken with strong anti-inflationary policies in place. While strengthening bank supervision, incremental adjustments in interest rates were made so as to maintain positive real levels. When firms began to feel the pinch of rising rates, they were quickly lowered. Thus, banks had no incentives to take excessive risks and financial liberalization was largely successful. Sri Lanka implemented gradual liberalization of interest rates, using the treasury bill rate as a benchmark. Later, domestic rates were allowed to move with foreign rates, adjusting for exchange rate changes. Strong supervision ensured sound banking practices and prevented the growth of bad debts. Finally, in Indonesia, gradual liberalization was initiated in an unstable macroeconomic environment but bank supervision was strong. However, high and volatile interest rates resulted because the government did not wait for the restoration of macro-stability before completely freeing interest rates. The banking system was destabilized as the financial position of the corporate sector deteriorated and the volume of non-performing loans grew.

METHODOLOGY

The *ex-post facto* research design was adopted to enable the researchers make use of secondary data to determine the cause-effect relationship of interest rates liberalization on savings, investment and economic growth in Nigeria. Interest rates used are the commercial banks deposit and lending rates sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin. The dependent and independent variables were observed over the period, 1987 to 2011; post-liberalization era. The same data are analyzed and tested using E-view statistical analytical technique to determine the impact of the independent variables on the dependent variables.

The first and most important step in attempting the study of any relationship between variables, is to express the relationship in mathematical form with which the phenomenon will be explored empirically. That is called specification of model or formulation of the maintained hypothesis (Koutsoyiannis, 2006). The specification of an econometric model is based on economic theory and on any available information relating to the phenomenon being studied. Hence, in line with existing studies in this area of finance, for instance, the work of Mckinnon (1973); Shaw (1973); Fry (1980), Giovannini (1985), Mwega and Ngola (1991), we adopt the linear regression models. According to Onwumere (2009), regression is a statistical technique used in measuring the impact of one or more variables (otherwise known as independent variables or regressors) on another variable (the dependent variable or the regressand). The general simple linear regression model according to Koutsoyiannis (2006), Gujarati and Porter (2009) and Onwumere (2009), is:

$$Y = \beta_1 + \beta_2 X + \mu \text{ --------i}$$

Where Y is a function of β independent variables and μ is the error term. Four hypothesis has been formulated to ease the analysis.

As already defined, deposit rate is the interest paid on savings and deposits. Thus, our first hypothesis states that deposit rate has no positive significant impact on savings in Nigeria and is represented by the equation:

$$SAV_t = C + bDR_t + \mu_t \text{--------ii}$$

Hypothesis two, which states that lending rate has no positive significant impact on investment in Nigeria is represented by:

$$INVST_t = C + bLR_t + \mu_t \text{--------iii}$$

The third hypothesis which states that savings has no positive significant impact on investment in Nigeria is represented by:

$$LOGINVST_t = C + bLOGSAV_t + \mu_t \text{ -------iv}$$

Hypothesis four states that investment has no positive significant impact on GDP in Nigeria and is represented by:

$$LOGGDP_t = C + bLOGINVST_t + \mu_t \text{-------v}$$

The following abbreviations are used in our analysis:
SAV_t = Savings at time t
$INVST_t$ = Investment at time t
DR_t = Deposit Rate at time t
LR_t = Lending rate at time t
GDP_t = Gross Domestic Product (A proxy for economic growth) at time t
$LOGSAV_t$ = Logarithm of Savings at time t
$LOGINVST_t$ = Logarithm of Investment at time t
$LOGGDP_t$ = Logarithm of GDP at time t

Analysis of Results

This section presents the analysis of results of our model variables.

Table 4.1. Analysis Of The Impact Of Deposit Rate On Savings

Dependent Variable: SAV
Method: Least Squares
Sample: 1987 - 2011
Included observations: 25

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DR	-0.056509	0.166848	-0.338684	0.7379
C	11.87047	1.667890	7.117061	0.0000
R-squared	0.604963	Mean dependent var		11.40240
Adjusted R-squared	0.538300	S.D. dependent var		4.581686
S.E. of regression	4.668601	Akaike info criterion		5.996214
Sum squared resid	501.3041	Schwarz criterion		6.093724
Log likelihood	-72.95268	F-statistic		0.114707
Durbin-Watson stat	0.401320	Prob(F-statistic)		0.737920

Source: Authors' E-view Results

As revealed from Table 4.1 above, deposit rate has negative and non-significant impact on savings in Nigeria after liberalization (coefficient of DR = -0.06, t-value = -0.34) using 1987 - 2011 data. The probability value of 0.74 > 0.05 further indicates that, this is non-significant. On the whole the coefficient of determination which measures goodness of fit as revealed by R-square (R^2) indicates that 60.5% of the variations observed in the dependent variable (savings rate) were explained by variations in the independent variable (deposit rate). The test of goodness of fit of the model as indicated by R^2 was properly adjusted by the Adjusted R-Square of 53.8%. Hence, deposit rates liberalization did not increase savings in Nigeria.

Table 4.2. Analysis Of The Impact Of Lending Rate On Investment

Dependent Variable: INVST
Method: Least Squares
Sample: 1987 -2011
Included observations: 25

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LR	-0.191445	0.330629	-0.579032	0.5682
C	20.92043	7.691794	2.719838	0.0122
R-squared	0.614368	Mean dependent var		16.54600
Adjusted R-squared	0.528486	S.D. dependent var		7.127037
S.E. of regression	7.227833	Akaike info criterion		6.870374
Sum squared resid	1201.556	Schwarz criterion		6.967884
Log likelihood	-83.87968	F-statistic		0.335278
Durbin-Watson stat	0.410586	Prob(F-statistic)		0.568196

Source: Authors' E-view Results

Table 4.2 reveal that, lending rate has negative and non-significant impact on investment in Nigeria after liberalization (coefficient of LR = -0.19, t-value = -0.58) using 1987-2011 data. The probability value of 0.57 > 0.05 further indicates that, this is non-significant. On the whole the coefficient of determination which measures goodness of fit as revealed by R-square (R^2) indicates that 61.4% of the variations observed in the dependent variable (investment rate) were explained by variations in the independent variable (lending rate). The test of goodness of fit of the model as indicated by R^2 was properly adjusted by the Adjusted R-Square of 52.8%. Hence, increase in lending rates following liberalization reduced investment.

Table 4.3. Analysis Of The Impact Of Savings On Investment

Dependent Variable: LOGINVST
Method: Least Squares
Sample: 1987 - 2011
Included observations: 25

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGSAV	1.055322	0.014461	72.97922	0.0000
C	-0.143276	0.079647	-1.798876	0.0846
R-squared	0.995514	Mean dependent var		5.603862
Adjusted R-squared	0.995327	S.D. dependent var		0.889142
S.E. of regression	0.060781	Akaike info criterion		-2.689285
Sum squared resid	0.088663	Schwarz criterion		-2.592509
Log likelihood	36.96071	F-statistic		5325.966
Durbin-Watson stat	0.848347	Prob(F-statistic)		0.000000

source: Authors' E-View Computation

Table 4.3 above shows that, savings has positive and significant impact on investment in Nigeria (coefficient of LOGSAV = 1.05, t-value = 72.98). The probability value of 0.00 < 0.05 further indicates that, this is significant. On the whole the coefficient of determination which measures goodness of fit as revealed by R-square (R^2) indicates that 99.5% of the variations observed in the dependent variable were explained by variations in the independent variable. The test of goodness of fit of the model as indicated by R^2 was properly adjusted by the Adjusted R-Square of 99.5%. Hence, an increase in savings leads to an increase in investment.

Table 4.4. Analysis Of The Impact Of Investment On Gdp

Dependent Variable: LOGGDP
Method: Least Squares
Sample: 1986 2011
Included observations: 26

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGINVST	0.930185	0.034017	27.34439	0.0000
C	1.197966	0.192922	6.209583	0.0000
R-squared	0.968900	Mean dependent var		6.410592
Adjusted R-squared	0.967605	S.D. dependent var		0.840235
S.E. of regression	0.151231	Akaike info criterion		-0.866207
Sum squared resid	0.548903	Schwarz criterion		-0.769430
Log likelihood	13.26069	F-statistic		747.7159
Durbin-Watson stat	0.481121	Prob(F-statistic)		0.000000

source: Authors' E-View Computation

As revealed from Table 4.4 above, investment has positive and significant impact on GDP in Nigeria (coefficient of LOGINVST = 0.93, t-value = 27.34) using 1987-2011 data. The probability value of 0.00 < 0.05 further indicates that, this is significant. On the whole the coefficient of determination which measures goodness of fit as revealed by R-square (R^2) indicates that 96.9% of the variations observed in the dependent variable were explained by variations in the independent variable. The test of goodness of fit of the model as indicated by R^2 was properly adjusted by the Adjusted R-Square of 96.8%. Hence, an increase in investment leads to an increase in GDP and therefore economic growth.

Conclusion and Recommendations

Conclusion

This study set out to examine the theoretical and empirical issues on the modified interest rate liberalization theory with a of determining the impact of interest rate liberalization on savings, investment and economic growth in Nigeria. Findings on the impact of interest rate on savings and investment in Nigeria after liberalization show that interest rate have negative and non-significant impact on savings and investment. This is an indication that, there was probably a problem with the policy structure or implementation. The essence of liberalizing interest rate was based on the assumption that liberalizing interest rate will cause interest rate to rise, thereby increasing savings and investment. There was a failure of the policy package as it did not produce the expected result. This failure was probably as a result of improper pace and sequencing of the policy package. However, the study reveal that increase in savings causes investment to raise. Also, there is evidence from the study that increase in investment leads to an increase in economic growth. Therefore, if emphasis is shifted from why and what to liberalize to how to liberalize, it is very likely that the benefits of liberalization will be achieved. That is to say, interest rate liberalization will causes interest rate to rise, thereby increasing savings and investment and automatically economic growth.

Recommendations

Therefore, we recommend that, in determining the appropriate sequencing of interest rate liberalization, the authorities need to distinguish not only between loan and deposit transactions but also between wholesale and retail transactions. Interest rates on wholesale transactions between sophisticated entities should be liberalized first, followed by lending rates on retail transactions and last, deposit rates. This gradual approach safeguards the profitability of banks while allowing time for people and firms to adjust to liberalization. Korea, Malaysia, and Turkey adopted this sequencing. China also followed this model, to allow time for the learning process. Deposit rates will be liberalized last to give the general public time to get used to a new way of setting rates. The rationale for liberalizing lending rates before deposit rates is that this sequencing makes it possible to avoid overly fierce competition in the banking sector, which could adversely affect

the profitability of financial institutions. Thus, it helps commercial banks buy time to strengthen their operations and financial structure. During this transitional period, governments should enact legislation on collateral and bankruptcy-essentially if the financial sector is to operate on a commercial basis. However, to avoid unstable deposit flows between financial institutions, it is prudent not to wait until all lending rates are fully liberalized before beginning to liberalize rates on some types of deposits –large time deposits, for example, which are usually held by large companies and institutional investors, in contrast with retail deposits held by individuals. Early liberalization of rates on large deposits is also justified by the fact that they will increasingly be competing with money market instruments - treasury bills or repurchase agreements. Many industrial countries – including Japan, the United States, and some European countries – liberalized wholesale deposit rates at an early stage. Of the developing countries, Korea also freed interest rates on wholesale deposits, as well as on large-denomination repurchase agreements, early in its reforms.

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