Governance and Real Estate Markets Performance in Nigeria: Are They Related?

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Governance has been identified as a key determining variable capable of influencing the performance of any economy activity. On this note, the study undertakes to investigate the relationship between governance and the real estate markets performance in Nigeria. The study employs ARDL methodology of Bound Testing Approach for the quarterly series spanning 1996Q1 to 2010Q4. Of the variables considered, the prominent role of real GDP and governance index were clearly brought to fore both in the short and long run while that of inflation and interest rates were less pronounced statistically. The result of ECM further accentuates connection between governance and the real estate market through the establishment a stable long run relationship between them. In the final analysis, a few policy prescriptions are advice for the attention of all stakeholders in the built environment.

Key words: governance, real estate market, ARDL, Nigeria

Introduction and Research Issue

Economics of real estate market has continued to gain wide recognition despite the excruciating pains inflicted on the world economy by the mortgage crisis occasioned by subprime lending which was originated in the US but later culminated into global financial crises with its attendant far-reaching consequences. The crises episode had barely succeeded eroding the potential investors as well as other stakeholders' interests in the sector. The persistent interests can at least be analyzed from the two main perspectives. First, the relative stability in the value of any typically real estate property as well as the likely associated returns seems more reliable and promising as compared to other forms of assets. Thus, the wealth effects associated with residential buildings are more significant than those linked to financial asset holdings in most economies (see Case, Quigley, and Shiller 2005).

Second, it constitutes the major assets in the household's portfolio in the case of the developed nations while it forms the greater proportion of household expenditure for the developing countries. This

explains why investing in real estate properties is becoming more popular and pronounced.

In view of the importance of the sector, several empirical attempts had been made understanding the key performance indicators driving the development of real estate markets and its subsequent accumulation. Notably, a number of factors have been identified as responsible for its development in the literature. Such include stability in the macroeconomic environment, size of country's population, growth of GDP, state of infrastructural facilities and a host of other factors. The importance of governance factor has long been undermined in the literature. However, both anecdotal and empirical evidences have pinpointed bad governance as a major drag on Africa's growth process. Many Africa countries have witnessed different episodes of bad governances resulting exclusively from excessive militarism and sit-tightism sydromes as well as large scale of corruption and other corrupt-related practices. In the light of the foregoing, the study specifically intends to focus on the Nigerian economy which typifies a typical Africa country. It is therefore belief that the emanated outcome of findings of the paper can be extrapolated for other Africa countries that share similar characteristics with Nigeria in many respects. The identified lacuna represents the major void that this study intends to fill. The rest of the study is organized as follows: section 2 gives a concise review of literature on investment decisions. Section 3 presents analytical framework, methodology and the description of the data used in the study. Section 4 presents the estimation results while section 5 concludes the study.

A Concise Literature Review

A rapidly expanding literature exists on the determinants of investment and the channels through which it can be affected. Theoretically, the traditional neo-classical theory as formulated by Jorgenson (1963; 1971) postulates the role of the cost of capital; the accelerator model posits the importance of rate of change of output; The Tobin's q argues for the critical role for the value of the firm, and the financial repression framework credited to Mckinnon (1973) and Shaw (1973). Over times several other theories had emerged adding to the existing line of argument like the real options theory of investment which uses options-based pricing techniques to study the investment decision of firms.[1]

The recent literature on the determinants of investment behaviour is divided into two groups: the macro econometric studies (or time

series analyses) for one or several countries and micro econometric studies using firm level data. However, although the current tendency is towards the micro econometric studies with panel data at the firm level, this study deals with the first methodology that uses macro data due to the absence of reliable micro data in ssa. Several macroeconomic determinants have also been comprehensively expounded on in the real estate literature (see Lieser and Groh 2011 for detail explanations). Few of these determinants are discussed in turn.

ECONOMIC ACTIVITY

Intuitively, it has been argued that real estate investments are correlated with the general economic activity and prosperity of a region or country. In Dipasquale and Wheaton's model (1992), a productive economy has been found to positively affect the demand for real estate assets.

Similar conclusion was arrived at by Chin, Dent, and Roberts (2006) who concluded from survey data that a sound economic structure and an expected strong and stable economy are perceived to be the most significant factors in a region's ability to attract foreign real estate investments.

REAL ESTATE INVESTMENT OPPORTUNITIES

The real estate investment opportunities, demographic attributes, and the market structure have been found as constituting important selection criteria for investment decisions (Han 1996). The accessibility of property is a critical factor in real estate investment due to the close link between market entry probability, liquidity risk, and market transparency. Liang and Gordon (2003) estimate the availability of higher quality, not owner-occupied commercial real estate based on gdp estimations.

DEPTH AND SOPHISTICATION OF THE CAPITAL MARKET

Mueller (1995) argues that the physical real estate market, with its capital-intensive nature, depends on general international capital flows. Adair et al. (1999) and Adlington et al. (2008) find that viable and sustainable real estate markets require an established liquid capital market, including a stable banking and financial services system. Worzala and Graeme (1997) find that access to local financing and credit facilities is important for investors to mitigate the cross currency risks.

INVESTOR PROTECTION AND QUALITY OF LEGAL FRAMEWORK

In their seminal work, La Porta et al. (1997; 1998) find that the legal environment strongly determines the size and extent of a country's capital market and local companies' ability to receive outside financing. They emphasize the difference between law on books and the quality of law enforcement. La Porta et al. (1997) argue that, of the world's four legal systems (English, French, German and Scandinavian), the English common law system is the most suitable for enhancing capital market development, while the French system is the least attractive.

ADMINISTRATIVE BURDENS AND REGULATORY LIMITATIONS

Solnik (1999) argues that investors trying to invest in foreign countries are exposed to constraints on management and corporate activity and regulatory limitations, which comprise the restriction on capital flows and ownership controls set upon particular government policies. D'Arcy and Keogh (1998) claim that each country's real estate market is further conditioned, amongst other criteria, by landlord and tenant law, planning law, and urban policy.

SOCIO-CULTURAL AND POLITICAL ENVIRONMENT

The fact that international investments are made in a different sovereign political jurisdiction has a major impact on the investment decision. Keogh and D'Arcy (1999) argue that countries' national property markets are defined by their socio-cultural and political environment. The socio-political risk comprises social risk and government policy risk and is an indicator of institutional problems in a country's public sector.

On empirical ground, innumerable number of studies has been documented on the determinants of investment both in the developed and developing economies. Such studies include those who investigates exchange rate adjustment and private investment (Balassa 1988; Duncan, Cuthbertson, and Bosworth 1999; Blejer and Khan 1984, Greene and Villanueva 1991), interest rate policy and private investment (Serven and Solimano 1993; van Wijnbergen 1985; Skully 1997; Pollard and Qalo 1994), and institutional factors and private investment (Weder 1998). What is however clear from the brief expositions show that the investment that have been so far considered were largely non-real estate market investments thus providing a marked line of distinction of our work from the previous research works.

More importantly, the literature that relates institutional factors (specifically, governance variables) to real estate market are still evolving and such examples include Liao and Jianping (1999) and Lieser and Groh (2011). Liao and Jianping (1999) conducted an empirical study on the relationship between institutional factors and real estate returns. Using data from both developed and emerging market countries, their empirical results show that institutional factors do influence real estate returns and that these factors may not be fully priced. They found that when controlling return volatility and level of economic growth, a higher property return is expected in countries where the economy is more efficient and has more economic freedom. Their results support the view that the combination of 'lumpiness' of real estate investment and the volatile nature of international capital flows may expose property investors to extra investment risk, which needs to be compensated. The results also indicated that an improvement in a country's economic efficiency and economic freedom might reduce property variance risk thus enhancing property returns.

Lieser and Groh (2011) examined the determinants of commercial real estate investments of commercial real estate investments using a unique set of panel data series for 47 countries from 2000 and 2009. They explore how different socio-economic demographic and institutional characteristics affect commercial real estate investment activity through both cross-sectional and time-series analyses running augmented random effect panel regressions. They provide evidence that economic growth, rapid urbanization and compelling demographic attract real estate investments and also confirm that lack of transparency in the legal framework, administrative burdens of doing real estate business, socio-cultural challenges and political instabilities of countries reduce international real estate allocations.

In light of the foregoing, the present paper hopes to add and contribute to the emerging literature by examining the relationship between governance and real estate markets performance for the Nigerian economy.

Theoretical Framework and Methodology

In the literature, various different approaches have been adopted such as the Keynesian model, the cash-flow model and neoclassical model in modelling investment behaviour. The neoclassical model is the most commonly adopted approach in the literature (Du Toit 1999; Du Toit and Moolman 2004; Pretorius 1998) in explaining investment decisions of firms. This study considers an augmented neoclassical

approach to be the most suitable approach in estimating the domestic investment function for Nigeria: Unlike the purely neoclassical model, it incorporates institutional characteristics. Therefore, institutional factors such as governance are treated as part of firms' optimization problem when making investment decisions. This study estimates real estate investment model, and augment it with some form of governance indicators, together with the real GDP, user cost of capital (interest rates) and inflation (a measure of macroeconomic instability). This is presented as:

$$\text{REST} = F(\text{RGDP}, \text{INF}, \text{INT}, \text{GOVINX}), \tag{1}$$

where REST is real estate market performance, RGDP real gross domestic product, INF inflation, INT interest rate, and GOVINX governance indicator.

Equation can be explicitly rewritten as

$$\text{REST} = \varphi_0 + \varphi_1 \text{RGDP} + \varphi_2 \text{INF} + \varphi_3 \text{INT} + \varphi_4 \text{GOVINX}). \tag{2}$$

Both REST and RGDP are in natural logarithms in order to remove the variances as other explanatory variables are in rates.

A PRIORI EXPECTATION

RGDP is a measure of economic activity. A positive relationship is hypothesized between real estate market development and real GDP. This has confirmed by many empirical studies (Ajide and Lawanson 2012). INF is a proxy for macroeconomic instability. Macroeconomic instability may increase uncertainty and adversely affect private investment. A high inflation rate is expected to negatively affect investment. INT is a surrogate for user cost of capital. Under the neoclassical investment model, real interest rate is treated as a key component of the user cost of capital and therefore affects investment negatively. However, there is also the argument that a higher real interest rate increases the flow of bank credits, which complements the private sector savings and facilitates private capital formation and hence private investment. GOVINX represents governance index. Thus, the worldwide governance indicators developed by Kaufmann, Kraay, and Zoido-Lobatón (1999) were utilised in this study as a measure of governance. The indices cover a broad range of policy and institutional outcomes for large number of countries, and include the rule of law, corruption, government effectiveness, regulatory quality, and political instability. Governance comprises of six governance measures (World Governance Indicators – WGI) provided by the World Bank as proxies of countries' governance qual-

ity (Kaufmann, Kraay, and Mastruzzi 2006). The indicators are constructed using an unobserved components methodology (Kaufmann, Kraay, and Mastruzzi 2010). *Voice and Accountability* (va) captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. *Political Stability and Absence of Violence* (ps) measures the perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including domestic violence and terrorism. *Government Effectiveness* (ge) captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. *Regulatory Quality* (rq) captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. *Rule of Law* (rl) captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. *Control of Corruption* (cc) captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests. Given the brief expositions on governance indicators, we then specify governance as:

$$\text{GOV} = f(\text{VA}, \text{RS}, \text{RL}, \text{GE}, \text{CC}), \tag{3}$$

where gov stands for governance indicator while va, ps, rl, rq, ge and cc are as earlier defined. Thus, a positive sign is hypothesize between governance and real estate market performance.

CONSTRUCTION OF GOVERNANCE INDEX

Following the expositions of Ang and McKibbon (2005) and Khan and Qayyum (2006), the principal component analysis (pca) is used to construct a governance index from six components of governance measures namely Voice and Accountability (va), Political Stability and Absence of Violence, (ps) Government Effectiveness (ge), Regulatory Quality (rq), Rule of Law (rl) and Control of Corruption (Corr). A composite index on governance index was constructed, using six indicators from the Kaufmann, Kraay, and Mastruzzi (2006). According to Sricharoen and Buchenrieder (2005, 2), 'pca is an indicator reduction procedure to analyze observed variables that would

result in a relatively small number of interpretable components (group of variables), which account for most of the variance in a set of observed variables.' The eigenvalues are calculated for each component. The size of an eigenvalue indicates the amount of variance in the principal component explained by each component. The first principal component reflects the largest proportion of the total variability in the set of indicators used. The second component accounts for the next largest amount of variability not accounted by the first component, and so on.

METHODOLOGY

The methodology of this study is designed to assess the impact of the governance on real estate markets performance in Nigeria. In this study, we utilize the Autoregressive Distributed Lag (ARDL) approach to cointegration as outlined by (Pesaran and Pesaran 1997) and (Pesaran, Shin, and Smith 1999). The ARDL model has been chosen here because it has numerous advantages. Firstly, it can be applied irrespective of whether the individual regressors are integrated of the order I(0) or I(1), regardless of stationarity. Secondly, the ARDL model takes sufficient number of lags to capture the data generating process from a general to specific modelling framework (Laurenceson and Chai 2003). Thirdly, the ARDL approach yields superior estimates of long-run coefficient, and, the diagnostic tests of the estimated equation are more reliable (Gerrard and Godfrey 1998, 235; Laurenceson and Chai 1998, 405). Fourthly, from the ARDL model, one can derive a dynamic error correction model (ECM) through a simple linear transformation (Banarjee et al. 1994, 50–52). The ECM also helps us to measure the short-run relationship among the model's variables. Finally, the ARDL model is a more appropriate measure in the case of a smaller sample. Since the sample size of our study is limited to 60 observations, it provides more motivation for the study to apply the ARDL approach for analysis.

$$
\begin{aligned}
\Lambda\text{LREST}_t = {} & \beta_0 + \sum_{i=1}^{p} \beta_1 \Delta\text{LREST}_{t-i} + \sum_{i=1}^{p} \beta_2 \Delta\text{LRGDP}_{t-i} + \sum_{i=1}^{p} \beta_3 \Delta\text{INF}_{t-i} \\
& + \sum_{i=1}^{p} \beta_4 \Delta\text{INT}_{t-i} + \sum_{i=1}^{p} \beta_5 \Delta\text{GOVINX}_{t-i} \\
& + \Psi_1 \text{LREST}_{t-i} + \Psi_2 \text{RGDP}_{t-i} + \Psi_3 \text{INF}_{t-i} \\
& + \Psi_4 \text{INT}_{t-i} + \Psi_5 \text{GOVINX}_{t-i} + \sigma_t.
\end{aligned} \tag{4}
$$

where Δ is 1st difference of a variable, L indicates that the data set are expressed in natural logarithms, β_0 is a constant, is a maximum

lag order, $\beta_1 \ldots \beta_5$ represent the short-run coefficients (error correction dynamic), $\Psi_1 \ldots \Psi_5$ correspond to the long-run relationship, i is time trend, and σ_i is the white noise error.

The implementation of the ARDL approach involves two stages. First, the existence of the long-run nexus (cointegration) between variables under investigation is tested by computing the F-statistics for analyzing the significance of the lagged levels of the variables (Pesaran, Shin, and Smith 1999) and (Narayan 2004) have provided two sets of appropriate critical values for different numbers of regressors (variables). This model contains an intercept or trend or both. One set assumes that all the variables in the ARDL model are of I(0), and another assumes that all the variables are I(1). If the F-statistic lies above the upper-bound critical value for a given significance level, the conclusion is that there is a non-spurious long-run level relationship with the dependent variable. If the F-statistic lies below the lower bound critical value, the conclusion is that there is no long-run level relationship with the dependent variable. If it lies between the lower and the upper limits, the result is inconclusive. The general form of the null and alternative hypotheses for the F-statistic test is as follows:

$$H_0 : \Psi_1 = \Psi_2 = \Psi_3 = \Psi_4 = \Psi_5 = 0.$$
$$H_1 : \Psi_1 \neq \Psi_2 \neq \Psi_3 \neq \Psi_4 \neq \Psi_5 \neq 0. \tag{5}$$

Secondly, if the cointegration between variables is identified, then one can undertake further analysis of long-run and short-run (error correction) relationship between the variables.

Econometric Technique and Discussion of Results

Unit root tests were conducted for all variables in the model and the results are presented in table 1. Both the Augmented Dickey Fuller (ADF) and Phillip Perron (PP) were conducted and both tests reject the null hypothesis of a unit root in the levels of real estate performance (REST) and inflation (INF) variables while this hypothesis is rejected in their first differences. Thus, it can be concluded that REST and INF are integrated of order 0. Both tests support the existence of a unit root in the levels of real GDP (RGDP), interest rates (INT) and governance index (GOVINX) while all three variables are stationary in first differences, thereby meaning they are all integrated of order 1.

The fact that two variables (REST and INF) were integrated of order 0 and the remaining three variables are of order 1 precludes the

TABLE 1 Unit Root Tests

Variables	ADF	PP	ADF	PP	Remarks
	Level		First difference		
REST	−4.7324***	−4.9872	−	−	I(0)
RGDP	−0.3358	−0.7157	−22.6201***	−6.1574***	I(1)
INF	−3.4458**	−5.2179***	−	−	I(0)
INT	−1.3479	−1.8919	−7.4968***	−12.1517***	I(1)
GOVINX	−2.0552	−1.7851	−12.0276***	−8.7612***	I(1)

NOTES Significant at *** 1%, ** 5% and * 10%.

use of either Engle-Granger or Johansen cointegration techniques. This is because both techniques require all variables to be of order 1 before cointegration tests can be applied. An alternative technique that does not impose this restriction is the Autoregressive Distributed Lag Framework (ARDL) of Pesaran, Shin and Smith (1999). The ARDL allows for the inclusion of variables integrated of order 0 and 1 in the same cointegrating equation.

The ARDL procedure comprises two steps. The first involves testing the null hypothesis of no long run relationship between the levels of the variables. In order to do this, an F-test with a non-standard distribution is employed. Pesaran, Shin, and Smith (1999) have provided two sets of asymptotic critical values for the cases when all the variables are I(1) and for cases when all the variables are I(0). If the computed F-statistic exceeds the lower critical value, then the null hypothesis of no long run relationship can be rejected provided all variables are either integrated of orders 0 and 1. On the other hand, if the F-statistic is lower than the critical value, the null hypothesis cannot be rejected. If a long run relationship exists, then the second step can be implemented. This involves estimation of the ADRL model using either the Akaike Information Criterion (AIC) or Schwarz Criterion (SBC) to select the maximum order of lags to obtain long run coefficients. This method involves the estimation of the error correction model (ECM) of the ARDL model.

DISCUSSION OF RESULTS

In accordance with the ARDL method, cointegration tests are conducted to examine the existence of a long run relationship between the variables by computing the F-statistic for the joint significance of lagged levels of variables. The results of the cointegration tests are presented in table 2.

The critical values used in this paper are extracted from Narayan (2004).[2] The F-statistic for the model is 40.0163, which is greater

TABLE 2   Bound Test Results

Test statistics	Value	Lag	Sig. levels	Bound Critical Values*	
				I(0)	I(1)
F-Statistics	40.0163	2	1%	4.324	5.642
			5%	3.116	4.094
			10%	2.596	3.474

NOTES   * Restricted intercept and trend, Based on Narayan (2004).

TABLE 3   Long Run Coefficients from ARDL Estimation – Dependent Variable: Rest

Regressor	Coefficient	Probability
Intercept	−2.6167(−9.4217)***	0.0000
LNRGDP	0.8455(11.5273)***	0.0000
INF	−0.0006(−0.5722)	0.5318
INT	0.0208(0.5818)	0.5825
GOVINX	0.0270(6.4076)***	0.0000
R^2	0.8773	
Adjusted R^2	0.7919	
Durbin-Watson statistics	1.9710	
F-statistics	52.5718	
Probability	0.0000	

NOTES   Significant at *** 1%, ** 5% and * 10%. Figures in parentheses are t-ratios.

than the upper critical bound (5.642) at the 1 percent significance level. This suggests that there is a long-run relationship among real estate performance, inflation, interest rates, real GDP and governance index. Thus, we can proceed to obtaining long run coefficients. The long run coefficients are presented in table 3.

The coefficients on all the variables conform to theoretical hypothesized signs except for the rate of interest that bears a contrary sign of positive. From the result, it can be observed that real GDP significantly exerts positive impact on the performance of real estate markets in Nigeria. In fact, a unit increase in the real GDP will increase the real estate market performance by 0.85. The macroeconomic instability proxy by inflation rate has a negative insignificant impact on the real estate markets as indicated by both values of t-ratio and probability. A unit increase in the rate of inflation will reduce real estate market value by only 0.0006. The user cost of capital measures by interest rate also indicates a positive but insignificant impact on real estate market. This can be explained in part by the fact that majority of real estate developers can hardly supply collateral securities to be able to source funds from banks. Governance has an apprecia-

TABLE 4 Error Correction Representation for ARDL Model – Dependent Variable: Rest

Regressor	Coefficient	Probability
Intercept	0.0040(1.2152)	0.2298
D(LNRGDP)	0.8026(9.5012)***	0.0000
D(INF)	0.0004(0.4933)	0.6239
D(INT)	0.0055(1.5604)	0.1247
D(GOVINX)	0.0255(5.9172)***	0.0000
ECM(−1)	−0.0475(−0.3393)	0.7358
R^2	0.6694	
Adjusted R^2	0.6377	
Durbin-Watson statistics	1.9818	
F-statistics	21.0614	
Probability	0.0000	

NOTES Significant at *** 1%, ** 5% and * 10%. Figures in parentheses are t-ratios.

ble impact on the performance of the real estate market as a unit increase in governance index will raise the market by 0.37.

The basic diagnosis tests show that 79 percent of the variation in real estate markets can be jointly explained by the set of explanatory variables in the model. The Durbin-Watson statistic shows that the model is free of serial autocorrelation model as its value fall within the acceptance region. The F-statistic shows that the null hypothesis of insignificance of the joint explanatory variables is rejected at the highest level of significance.

In order to see the short run dynamics, the estimates of the error of the error correction model are presented in table 4.

From the table, quite insightful results emerge as only the coefficient on the real GDP and governance index have the correct a priori signs while other explanatory variables carry contradictory signs. Like in the long run, real GDP still possesses a positive sign and as well significant at 1% level. What this implies in effect is that real GDP is one of the main factors influencing real estate markets performance. It is startling to note that inflationary trend episode and high interest rate tend to improve the performance of the sector. This may be attributed to profit-maximizing attitude of real estate market developers who may care less about the hike in prices of materials used for the construction but only became interested in real estate businesses at the instance of anticipation of maximum future profits. This explains the trend of constant real estate and housing collapse presently witnessing by the country. More importantly, governance factor also exerts significant positive impacts on the development

of real estate markets. This in effect means that, governance plays a key role in real estate market delivery. The error correction term is negative but statistically insignificant. Specifically, only about 5% of the disequilibrium errors that occurred in the previous year, are corrected in the current year. The robustness of the model has been definite by several diagnostic tests such as Breusch-Godfrey serial correlation LM test, ARCH test, Jacque-Bera normality test and Ramsey RESET specification test. All the tests disclosed that the model has a satisfactory econometric properties, it has a correct functional form and the model's residuals are serially uncorrelated, normally distributed and homoskedastic. Therefore, the outcomes reported are serially uncorrelated, normally distributed and homoskedastic. Hence, the results reported are valid for reliable interpretation. This can be confirmed at the appendix.

Conclusion and Recommendations

The contribution of the real estate markets to economic progress of any economy has been well established in the development literature. The paper examines the causal nexus between governance and real estate markets performance in Nigeria. The paper uses a quarterly series between 1996Q1 and 2010Q4, employing ARDL methodology of Bound Testing Approach. The results show that real GDP and governance index significantly influence the performance of the real estate markets in Nigeria, on the one hand, while inflation and interest rates appear to be insignificant in both runs (short and long). Flowing naturally from this, are a few policy recommendations, which includes government should continue to strengthening as well as promoting the culture of good governance practices in the real estate markets. This can be done through benchmarking each dimension of governance index against internationally recognized criteria. Further, since high and volatile inflationary environment is inimical to nurturing country's economic progress, hence should be discouraged forthwith. This can possibly be achieved by maintaining a single digit inflation rate. Lastly, a high rising interest rate should be discouraged by the government mostly among the financial players in the economy. This can be realized provided a monitoring framework is being put in place and ensure that any defaulter is being severely sanctioned accordingly.

Notes

1. This section of the paper is not meant to repeat the literature in this respect. For further readings the following can be consulted Greene

and Villanueva (1991), DeLong and Summers (1991), Chibber, Dail-ami, and Shafik (1992), Serven and Solimano (1993), Bleaney and Greenaway (1993), Bleaney, Greenaway, and Fielding (1995), Ibarra (1995), and Bleaney (1996).

2. All estimation results are obtained using Microfit Version 4.1 developed by Pesaran and Pesaran (1997). Narayan (2004) has provided critical values that are considered more appropriate for ARDL modelling using small samples as compared to Pesaran and Pesaran (1997) and Pesaran, Shin, and Smith (2001). These critical values are based on small sample size between 30 and 80 observations, unlike Pesaran and Pesaran (1997) and Pesaran, Shin, and Smith (2001) which are based on 500 and 1000 observations and suitable for large sample size.

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