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Financial Development, Foreign Direct Investment and Economic Growth in Nigeria

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Abstract

The study examined effects of financial development and foreign direct investment on economic growth in Nigeria.. The study modified the standard endogenous model to incorporate foreign direct investment and financial development as the determinant of growth in the long run. Using time series data from 1970 to 2009, the study tested for the time series properties of the variable and adopted the Autoregressive Distributed Lag (ARDL) technique to estimate the model. The results showed that financial development and foreign direct investment had negative effects on economic growth in Nigeria. The result further showed that the effect of foreign direct investment differed significant when different measures of financial market are used. Specifically foreign direct investment was only significant when combined with stock market indices. The result also showed that financial market liquidity but not the size of the financial market that matter for economic growth in Nigeria

Keywords: financial development, foreign direct investment, economic growth, Nigerian economy

INTRODUCTION

The recent economic challenges and failure of some countries that have experienced both increase in FDI and stock market activities have made scholars to raise issues with respect to the relation between FDI and stock market development. On one hand, there is the view that FDI tends to be larger in countries that are riskier, financially underdeveloped and institutionally weak, (Haussmann and Fernandez-Arias, 2000). Under this view, FDI is a substitute for stock market development- FDI takes place to overcome the difficulties of investing through capital market. According to this view, FDI should be negatively correlated with the development of stock market. In contract to this view, evidence from some countries showed that FDI flows into countries with good institutions and fundamentals and fuels the development of stock market through different channels.

This invariably implies that FDI and stock market may be complementary and not substitute. For instance, FDI can be positively related to the participation of firm in capital markets, since foreign investors might want to finance part of their investment with external capital or might want to recover their investment by selling equity in capital markets. Also, given that foreign investors partly invest through purchasing existing equity, the liquidity of stock markets will likely rise, thus the value traded domestically and internationally might both increase depending on where these purchases take place. Apart from the aforementioned views, another view posits that FDI and stock market have no direct linkage with economic growth; rather they affect other growth determinants (saving, investment and consumption) of which their final effect depends substantial on the linkage between these intermediate variables and economic growth. In view of the foregoing, examining relationship between these variables and economic growth in Nigeria is imperative and compelling. Apart from this, introductory section, the paper is subdivided into four other sections. Section 2 review existing literature, while section 3 provides the methodology and section 4 presents the empirical results and section 5 concludes with policy implication.

REVIEW OF EMPIRICAL LITERATURE

There have been considerable studies on either financial development or FDI on economic growth in Nigeria with diverse results. Dinda (2009) revealed that the endowment of natural resources, openness, macroeconomic risk factors like inflation and exchange rates are significant determinants of FDI inflow to Nigeria. Asiedu (2006) found natural resources, large market size, lower inflation, good infrastructure, an educated population, openness to FDI, less corruption, political stability and a reliable legal system as major determinants of FDI flows. Anyanwu (1998) identified change in domestic investment, change in domestic output or market size, indigenization policy, and change in openness of the economy as major determinants of FDI. Odozi (1995) revealed that macroeconomic policies in the pre SAP period discourage foreign investors and the policy environment in the pre SAP period led to the

proliferation and growth of parallel markets and sustained capital flight; Ogiogio (1995) reported that the contributions of public investment to GDP growth in Nigeria was the major distortions of FDI inflows into the Nigerian economy while Ekpo (1995) reported that political regime, real income per capita, rate of inflation, world interest rate, credit rating and debt service were the key factors explaining the variability of FDI into Nigeria On FDI-growth relationship, Aluko (1961), Brown (1962), Obinna (1983) and Oseghale and Amonkhienan (1987) found a positive relationship between FDI and economic growth in Nigeria. In contrast, Oyinlola (1995), Ariyo (1998) and Adelegan (2000) reported that FDI has a negative effect on economic development in Nigeria. Akinlo (2004) found that foreign capital has a small and not statistically significant effect on economic growth in Nigeria. At the micro level, Ayanwale and Bamire (2001) found a positive spillover of foreign firms on domestic firm's productivity.

The pioneering work by Shaw (1973) emphasized the role of financial intermediation in enhancing savings, investment and consequently economic growth. Relatedly, many studies have examined the finance-growth nexus using cross sectional/panel and country specific times series data. Cross-country studies by Roubini and Sala-l-Martin (1992), Easterly (1993), De Gregorio and Guidotti (1995), Khan and Senhadji (2000) and Andersen and Tarp (2003) lend credence to financial development having a positive effect on long-run economic growth. Also, King and Levine (1993a), Levine and Zervos (1998), Beck et. al. (2000), Rajan and Zingales (2001), gave empirical evidence supporting the hypothesis that financial development enhances economic growth. With respect to African economies, Aziakpono (2002) and Nwokoma (2004) provided evidence that financial development have contributed positively to economic growth.

As observed above, previous studies only focused on either FDI or financial market without attempting to examine directly the relationship between financial market, FDI and economic growth in a single model. Omitting either of the two variables in a model that examine their individual contributions to economic growth made it difficult to assess whether the empirical relationship between these two variables and economic growth is robust. More so, the omission of either of the two variables in a model might have impeded the ability to draw policy inferences on whether domestic and external finance inflows matter for growth and to identify the separate impact of both domestic and external finance on economic success. Furthermore, none of these studies attempted to investigate the validity or otherwise, of the substitutability and complementarities hypotheses on the FDI- financial market role on economic growth. This constituted the empirical gap this study attempts to investigate.

EMPIRICAL METHODOLOGY AND DATA

The paper draws on the Augmented Cobb-Douglas production function to model the effect of FDI and financial development on economic growth. Following De Mello (1996) the starting point function is given as:

$$Y = Af\left(L, K_D, E\right) \quad (5)$$

Written more explicitly

$$Y = AL^{\alpha}K_D^{\beta}E^{\gamma} \quad (6)$$

Where Y is the real output, A the economic environment, K_D denotes the domestic capital stock, L represents labour force or labour, and E reflects the externality generated by the presence of FDI inflows. Here α, β and γ are the elasticity of the local labour force, domestic capital and foreign investment, respectively. However, the possibility that presence of FDI inflows will generate positive split over efficiency depends on the capacity of the economy to absorb the advantages embodied in the FDI inflows (Borensztein et al, 1998). Therefore *E* could be expressed *as* a function of labour (*L*), domestic capital stock (K_D) and foreign capital stock (K_F) that is:

$$E = \left(L, K_D, K_F^{\theta}\right)\varphi \quad (7)$$

θ and φ are the marginal and inter-temporal elasticities of substitution between local and foreign capital, respectively. Equation (7) suggests that $\theta > 0$ such that a greater stock of FDI yields a positive externality to the growth rate of the recipient country. On the other hand, $\varphi > 0$ indicates that inter-temporal complementarity exists, while $\varphi < 0$ suggests that the presence of FDI 'crowd out' local private investment over time and decreases the growth rate of the host economy (Bosworth and Collins 1999). Substituting equation (7) into (6) yields:

$$Y = AL^{\alpha}K_D^{\beta}\left(L, K_D, K_F^{\theta}\right)\varphi\gamma = AL^{\alpha+\varphi\gamma}K_D^{\beta+\varphi\gamma}K_F^{\theta\varphi\gamma} \quad (8)$$

Taking natural logarithms and time derivatives of equation (8) produce the following dynamic production function:

$$g_Y = g_A + (\alpha + \varphi\gamma)g_L + (\beta + \varphi\gamma)g_{K_D} + (\theta\varphi\gamma)g_{K_F} \quad (9)$$

g_i, is the growth rate for i= *Y, A, L,* K_D and K_F and equation (9) indicated that if φ and $\gamma > 0$ the presence of FDI inflows will augment the elasticity's of output with respect to labour and capital by a factor of $\varphi\gamma$. *A*fter taking account of the macroeconomic environment or factor endowments, the general formulation of equation (9) is:

$$\Delta Y = \alpha + \beta_1\Delta l + \beta_2\Delta k_D + \beta_3\Delta k_F + \beta_4\Delta pub + \beta_5\Delta Fd + \beta_6 Open + \varepsilon \quad (10)$$

The lower case letters indicate natural logarithms and Δ is the difference operator; *Y* represents the natural log of real GDP; *l* is the natural log of labour

force; k_D and k_F denote the natural log of domestic investment *(INV)* and foreign investment *(FDI),* respectively*: pub* stands for the natural log of government capital expenditure; *Fd* represents the natural log of the financial market development indicators1, *Open* represents trade openness to capture the trade component of economic globalisation. Generally *FDI* is usually considered as the financial openness, while trade openness is the trade components and ε is a normally distributed error term. Following standard economic theory, β_1, β_2, β_3, β_5 and β_6 t are expected a priori to be positive and β_4 can either be positive or negative depending on the tendency of government expenditure.

$$ggdp = \alpha + \beta_1 glab + \beta_2 gpriv + \beta_3 fd + \beta_4 gpuiv + \beta_5 fdi gdp + \beta_6 \Delta fd_{-1} fdi + \beta_6 \Delta opnx + \varepsilon \quad (11)$$

gdp = gross domestic output,
opnx= = export plus import as ratio of GDP
priv = gross private investment
puiv = public investment
fdi = foreign direct Investment
fi = financial market development; and
lab = Labour force
g(*) represents the growth rates of all the variables

'fd' is a composite variable comprising three measures for bank and stock market sections of financial development. The components of these financial variables are described under the data description and sources below. Equation (11) will be estimated for different successive models, capturing in the process all the vectors of financial development indicators.

Data Description and Sources

The key data used in this study are indicators of financial depth, financial sector development and foreign direct investment, as well as measures of real economic growth and its sources. The samples consisted of time series data of 40 observations for the period 1970 to 2009. Economic growth is measured by the real gross domestic output (*Y*) calculated by dividing the gross domestic output by the consumer price index. The Foreign Direct Investment (*FDI*) variable is measured by the direct investment items in the balance of payment account of Nigeria as contained in the various edition of Statistical Bulletin. Private investment (*PRIV*) is proxy by the gross capital formation; labour force (*LAB*) is proxy by size population in the working age bracket as calculated from the population figures published by the census board. The public investment (*PUIV*) is measured as the federal government total expenditure less recurrent expenditure. Trade openness (*OPNX*) is measured as import plus export/gdp. Import was measured by total import of goods and services while export was measured as non-oil export of goods and services. Variables representing financial market can be divided into two categories: The first category represented the banking sector or primary credit market while the second category represented the stock market or secondary credit market.

Following Guarglia and Poncet (2006) three groups of bank based financial development indicators are used namely: measures of financial depth; misallocation of financial resources; and market-oriented financing. The first is defined as the ratio of saving deposits to GDP *(FSD 1)*. The second indicator is defined as the ratio of total credits to GDP (*FSD 2*) and the third measure is the ratio of loans to deposits, which served as a proxy for cash relending *(FSD 3)*.

In the cases of stock market indicator, Brasoveanu et al (2008) had also classified the capital market indicators into categories namely (i) size variables and (ii) liquidity variables. These sets of stock market development variables had been used severally in the literature . Size variable is proxy by market capitalization ratio *(STK1)* which is defined as market capitalization/GDP as used by Campos, et al (1999). Liquidity variable is proxy by (i) value traded ratio (*STK2*) defined as trading volume and (ii) turnover ratio (*STK3*) defined as trading volume/market capitalization as used by Levine and Zervos, (1998). The data on Stock market indicators were collected from various editions of publication of the Nigeria Stock Exchange Market while private credit and liquidity liabilities will be collected from the World Bank Indicator database Online. Data on other financial variables, government capital expenditure, inflation rate, FDI, domestic investments and gross domestic output were collected from the International Financial Statistics.

EMPIRICAL RESULTS

The starting point is the examination of the time series properties of the variables. Macroeconomic variables are known to be non stationarity series. The stationarity properties among the variables in the models are examined using the standard Augmented Dickey Fuller stationary test and the result is presented in Table 1 below. The ADF test shows that all the variables were only stationary after first differencing, thus implying that the variables should enter the model in their growth rate forms.

[1] See data descriptions for various measures of financial development to be used in the study

Table 1 Results of the Unit Root Tests based on Augmented Dickey-Fuller Test

Series	Level	1st Difference	Order of Integration
LGDP	-2.2574	-5.7418	I(1)
LFDIGDP	-2.1456	-12.0449	I(1)
LABGDP	-0.1447	-2.9872	I(1)
LPUIVGDP	-0.2961	-7.4154	I(1)
LPRIVGDP	-0.9069	-5.1895	I(1)
LOPNX	0.0064	-6.4197	I(1)
LFSD1	0.8201	-5.8740	I(1)
LFSD2	-2.5904	-6.3628	I(1)
LFSD3	0.8548	-5.8184	I(1)
LSTK1	-0.5924	-5.7403	I(1)
LSTK2	0.5575	-6.1205	I(1)
LSTK3	-2.4785	-5.2573	I(1)
Test Critical values			
1%	-3.6156	-3.6210	
5%	-2.9411	-2.9434	
10%	-2.6091	-2.6103	

Note: All the variables and symbols are as defined earlier.
Source: Author's Computation

Table 2 summarizes estimates of regression based on Equation (11). The net effects of the variables on economic growth were calculated as the sum of contemporaneous and lagged values of financial development and foreign direct investment. The Wald test result showed that foreign direct investment had significant positive effects when combined with liquidity and turnover measures of financial market development indices. Financial market development was not significant when measures in term of size in model I and III. This implies that liquidity in financial market is more important in economic growth process. In fact, it was only in this measure of financial development that both financial development and foreign direct investment were significant. This implies that financial liquidity enhances the efficiency of foreign direct investment inflow in the economy.

Table 2: Summary Statistics on the Effects of Financial Development and FDI on Economic Growth

Series	Model1	Model2	Model3	Model4	Model5	Model6
NET EFFECT OF KEY VARIABLES						
FDI	-0.025	-0.298	-0.178	-0.151	-0.289	-0.306
FD	-0.561	-0.945	-0.779	-0.010	-0.242	-0.003
WALD TEST F-Statistics						
FDI	0.033(0.856)	4.149(0.59)	1.874(0.1912)	0.980(0.33)	**4.41(0.05)**	**7.35(0.01)**
FD	2.49(0.134)	**5.021(0.040)**	**6.60(0.0213)**	0.003(0.95)	**4.81(0.04)**	**12.69(0.002)**

Note: Model1 used FSD1; Model2 used FSD2; Model3 used FSD3; Model4 used STK1 while Model5 and Model6 used STK2 and STK3 respectively as measure financial developments

A noteworthy observation from these results was that foreign direct investment had net negative effect on economic growth. This implied that despite the upsurge in the financial inflow into Nigeria, the expected positive effect remains a mirage. There were studies that have found similar negative effect on growth in other countries that shared similar experience with Nigeria. Choong and Lim (2009) reported similar negative effect of foreign direct investment on economic growth in Malaysia. Financial development also had negative effects on economic growth, suggesting that both foreign direct investment and financial development had no significant positive effects on economic growth. However, the recent experience in Nigeria might make the evidence of some studies that reported positive effect between these two variables and

economic growth in Nigeria susceptible. In recent times, the substantial upsurge in foreign direct inflows was not accomplished by substantial increase in economic growth. Also financial development recently witnessed upsurge in activities due to financial reform. The central banks in 2001 introduced universal banking system and in 2004 there was bank consolidation that increased the tempo not only in the banking sector but also the stock market. Most of the banks were declaring huge profit, rather than this phenomenal development in financial market translating to economic growth, the growth was not significantly affected by the development in the financial sector.

CONCLUSION AND POLICY IMPLICATION

The study has established that FDI might not be a major factor in stimulating economic growth. In addition, it also showed that though there were significant differences in the effect of financial development and FDI inflow, the overall consequences of these effects on the domestic economy was negative. Thus suggesting the financial development rather than mitigating the negative effect of FDI, financial development especially stock market development exacerbated the negative effect of FDI on Nigeria economy. The possible explanation for the adverse effect of foreign direct investment might be that fact that the bulk of capital inflows in to Nigeria had been to the oil sector. As Ajakaiye (2001) noted, this sector had low linkage with the rest of economy in Nigeria. Increase in inflows to this sector might not lead to improve economic conditions and infrastructure that could stimulate economic growth proportionally. Similar argument could be adduced for the less impressive effect of financial market. The financial institutions in Nigeria had abandoned their primary intermediating role for non conventional business. Most of bank loans and advances are directed to consumable import finance, oil importation and margin loans to stock market speculators. For foreign direct investment to have significant positive impact, capital inflows should be directed to sectors with potential competitive advantages and where complementarily with domestic investments were likely to be higher. In addition, the government should promote effectively the development of technological and human capital capabilities in order to attract foreign direct investment in higher-value added activities, as well as to ensure Nigeria can assimilate these technologies effectively.

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APPENDIX

Table A1: Model with Total Savings measure of Financial Development

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.138181	0.071504	1.932494	0.0724
DLRGDP(-1)	0.599251	0.248324	2.413183	0.0291
DLRGDP(-2)	-0.309826	0.281696	-1.099860	0.2887
DLFDIGDP	-0.018321	0.051830	-0.353482	0.7286
DLFDIGDP(-1)	-0.029095	0.063546	-0.457848	0.6536
DLFDIGDP(-2)	0.022053	0.050440	0.437215	0.6682
DLFSD1	-0.677270	0.181786	-3.725647	0.0020
DLFSD1(-1)	0.367887	0.240787	1.527852	0.1474
DLFSD1(-2)	-0.251519	0.261003	-0.963663	0.3505
DLLABGDP	0.025225	0.130331	0.193545	0.8491
DLLABGDP(-1)	-0.091584	0.143883	-0.636518	0.5340
DLLABGDP(-2)	0.097658	0.148218	0.658884	0.5200
DLOPNX	-0.038741	0.127837	-0.303046	0.7660
DLOPNX(-1)	0.137882	0.137546	1.002449	0.3320
DLOPNX(-2)	0.006941	0.135703	0.051147	0.9599
DLPRIVGDP	-0.330374	0.246946	-1.337840	0.2009
DLPRIVGDP(-1)	0.169355	0.207336	0.816816	0.4268
DLPRIVGDP(-2)	-0.279075	0.227067	-1.229041	0.2380
DLPUIVGDP	0.030298	0.163310	0.185524	0.8553
DLPUIVGDP(-1)	0.099176	0.182775	0.542613	0.5954
DLPUIVGDP(-2)	0.092180	0.172240	0.535184	0.6004
R-squared	0.929748	Mean dependent var		0.136855
Adjusted R-squared	0.836080	S.D. dependent var		0.357664
S.E. of regression	0.144808	Akaike info criterion		-0.735621
Sum squared resid	0.314539	Schwarz criterion		0.188098
Log likelihood	34.24118	F-statistic		9.925911
Durbin-Watson stat	1.930692	Prob(F-statistic)		0.000021

Table A2: Model with Bank Credit as measure of Financial Development

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.134339	0.068954	1.948244	0.0703
DLRGDP(-1)	0.438262	0.240988	1.818602	0.0890
DLRGDP(-2)	-0.452246	0.265703	-1.702074	0.1094
DLFDIGDP	-0.098192	0.059951	-1.637873	0.1222
DLFDIGDP(-1)	-0.133434	0.068985	-1.934235	0.0722
DLFDIGDP(-2)	-0.066681	0.052711	-1.265030	0.2252
DLFSD2	-0.344430	0.247555	-1.391330	0.1844
DLFSD2(-1)	-0.086628	0.248185	-0.349048	0.7319
DLFSD2(-2)	-0.513741	0.233101	-2.203946	0.0436
DLLABGDP	-0.007138	0.154656	-0.046155	0.9638
DLLABGDP(-1)	-9.70E-05	0.161036	-0.000603	0.9995
DLLABGDP(-2)	0.078104	0.166125	0.470150	0.6450
DLOPNX	0.108189	0.155284	0.696719	0.4966
DLOPNX(-1)	0.105744	0.156878	0.674052	0.5105
DLOPNX(-2)	-0.012124	0.156216	-0.077609	0.9392
DLPRIVGDP	-0.667582	0.246993	-2.702840	0.0164
DLPRIVGDP(-1)	0.258324	0.258211	1.000435	0.3330
DLPRIVGDP(-2)	-0.185574	0.269669	-0.688155	0.5019
DLPUIVGDP	-0.142897	0.193512	-0.738438	0.4716
DLPUIVGDP(-1)	0.170574	0.198785	0.858085	0.4043
DLPUIVGDP(-2)	-0.163707	0.211368	-0.774515	0.4507
R-squared	0.903866	Mean dependent var		0.136855
Adjusted R-squared	0.775687	S.D. dependent var		0.357664
S.E. of regression	0.169396	Akaike info criterion		-0.421960
Sum squared resid	0.430424	Schwarz criterion		0.501759
Log likelihood	28.59529	F-statistic		7.051604
Durbin-Watson stat	1.746282	Prob(F-statistic)		0.000179

Table A3: Model with Loan/deposit measure of Financial Development

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.193484	0.079569	2.431664	0.0280
DLRGDP(-1)	0.495170	0.241818	2.047700	0.0585
DLRGDP(-2)	-0.487839	0.359272	-1.357854	0.1946
DLFDIGDP	-0.081194	0.054314	-1.494921	0.1557
DLFDIGDP(-1)	-0.077700	0.060240	-1.289841	0.2166
DLFDIGDP(-2)	-0.018761	0.045862	-0.409070	0.6883
DLFSD3	-0.406350	0.198134	-2.050889	0.0582
DLFSD3(-1)	0.209792	0.218408	0.960551	0.3520
DLFSD3(-2)	-0.582028	0.324535	-1.793417	0.0931
DLLABGDP	-0.056057	0.131504	-0.426272	0.6760
DLLABGDP(-1)	-0.040659	0.141085	-0.288192	0.7771
DLLABGDP(-2)	0.108926	0.140943	0.772836	0.4516
DLOPNX	0.045897	0.122079	0.375965	0.7122
DLOPNX(-1)	0.090022	0.136991	0.657139	0.5210
DLOPNX(-2)	-0.045103	0.131011	-0.344269	0.7354
DLPRIVGDP	-0.367225	0.255109	-1.439482	0.1706
DLPRIVGDP(-1)	0.077974	0.213652	0.364956	0.7202
DLPRIVGDP(-2)	-0.039121	0.237234	-0.164905	0.8712
DLPUIVGDP	-0.055981	0.148056	-0.378107	0.7106
DLPUIVGDP(-1)	0.224170	0.156430	1.433043	0.1724
DLPUIVGDP(-2)	0.134587	0.166305	0.809276	0.4310

R-squared	0.932090	Mean dependent var	0.136855
Adjusted R-squared	0.841543	S.D. dependent var	0.357664
S.E. of regression	0.142374	Akaike info criterion	-0.769522
Sum squared resid	0.304055	Schwarz criterion	0.154198
Log likelihood	34.85139	F-statistic	10.29404
Durbin-Watson stat	2.123556	Prob(F-statistic)	0.000017

Table A4: Model with Market capitalization measure of Financial Development

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.059981	0.086035	0.697176	0.4964
DLRGDP(-1)	0.483535	0.263227	1.836952	0.0861
DLRGDP(-2)	-0.285295	0.300313	-0.949993	0.3572
DLFDIGDP	-0.041559	0.059855	-0.694327	0.4981
DLFDIGDP(-1)	-0.069538	0.071961	-0.966336	0.3492
DLFDIGDP(-2)	-0.039437	0.056060	-0.703491	0.4925
DLSTK1	-0.134598	0.084465	-1.593535	0.1319
DLSTK1(-1)	0.031193	0.085983	0.362787	0.7218
DLSTK1(-2)	0.113041	0.111368	1.015018	0.3262
DLLABGDP	0.067444	0.157895	0.427144	0.6753
DLLABGDP(-1)	0.156855	0.167185	0.938209	0.3630
DLLABGDP(-2)	0.144213	0.169238	0.852134	0.4075
DLOPNX	0.127799	0.155773	0.820421	0.4248
DLOPNX(-1)	0.004693	0.160690	0.029204	0.9771
DLOPNX(-2)	-0.087329	0.155630	-0.561134	0.5830
DLPRIVGDP	-0.615034	0.252243	-2.438262	0.0277
DLPRIVGDP(-1)	0.070211	0.253586	0.276874	0.7857
DLPRIVGDP(-2)	-0.377066	0.269772	-1.397718	0.1825
DLPUIVGDP	-0.085682	0.177514	-0.482678	0.6363
DLPUIVGDP(-1)	0.289986	0.187442	1.547072	0.1427
DLPUIVGDP(-2)	-0.027269	0.214305	-0.127244	0.9004

R-squared	0.902736	Mean dependent var	0.136855
Adjusted R-squared	0.773050	S.D. dependent var	0.357664
S.E. of regression	0.170388	Akaike info criterion	-0.410275
Sum squared resid	0.435483	Schwarz criterion	0.513445
Log likelihood	28.38494	F-statistic	6.960965
Durbin-Watson stat	1.771915	Prob(F-statistic)	0.000193

Table A5: Model with Volume of Shared traded measure of Financial Development

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.128658	0.063400	2.029302	0.0606
DLRGDP(-1)	0.638953	0.248231	2.574024	0.0212
DLRGDP(-2)	-0.743421	0.279617	-2.658709	0.0179
DLFDIGDP	-0.055387	0.054528	-1.015740	0.3259
DLFDIGDP(-1)	-0.134992	0.064583	-2.090199	0.0540
DLFDIGDP(-2)	-0.098965	0.052219	-1.895201	0.0775
DLSTK2	-0.118633	0.059387	-1.997620	0.0642
DLSTK2(-1)	0.021343	0.073709	0.289563	0.7761
DLSTK2(-2)	-0.144493	0.075372	-1.917056	0.0745
DLLABGDP	0.065283	0.142605	0.457789	0.6537
DLLABGDP(-1)	0.133134	0.149936	0.887945	0.3886
DLLABGDP(-2)	0.181940	0.161719	1.125041	0.2783
DLOPNX	0.211336	0.140765	1.501346	0.1540
DLOPNX(-1)	0.042127	0.149584	0.281629	0.7821
DLOPNX(-2)	-0.101833	0.146210	-0.696484	0.4968
DLPRIVGDP	-0.901430	0.243908	-3.695777	0.0022
DLPRIVGDP(-1)	0.099781	0.225999	0.441512	0.6651
DLPRIVGDP(-2)	-0.294547	0.252316	-1.167370	0.2613
DLPUIVGDP	0.052368	0.168815	0.310207	0.7607
DLPUIVGDP(-1)	0.412748	0.182973	2.255788	0.0394
DLPUIVGDP(-2)	-0.197666	0.188955	-1.046099	0.3121
R-squared	0.916319	Mean dependent var		0.136855
Adjusted R-squared	0.804745	S.D. dependent var		0.357664
S.E. of regression	0.158044	Akaike info criterion		-0.560694
Sum squared resid	0.374667	Schwarz criterion		0.363025
Log likelihood	31.09249	F-statistic		8.212622
Durbin-Watson stat	2.022975	Prob(F-statistic)		0.000070

Table A6: Model with Turnover ratio measure of Financial Development

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.036446	0.052517	0.693991	0.4983
DLRGDP(-1)	0.656074	0.173077	3.790659	0.0018
DLRGDP(-2)	-0.578958	0.188296	-3.074727	0.0077
DLFDIGDP	-0.057181	0.044914	-1.273131	0.2223
DLFDIGDP(-1)	-0.142958	0.052724	-2.711424	0.0161
DLFDIGDP(-2)	-0.105533	0.041922	-2.517393	0.0237
DLSTK3	-0.142970	0.069401	-2.060046	0.0572
DLSTK3(-1)	0.032153	0.050590	0.635568	0.5346
DLSTK3(-2)	-0.257040	0.055819	-4.604915	0.0003
DLLABGDP	0.143504	0.121092	1.185088	0.2544
DLLABGDP(-1)	0.209920	0.126172	1.663765	0.1169
DLLABGDP(-2)	0.157466	0.127579	1.234263	0.2361
DLOPNX	0.120836	0.108797	1.110658	0.2842
DLOPNX(-1)	0.025312	0.123594	0.204804	0.8405
DLOPNX(-2)	-0.173362	0.122778	-1.411999	0.1784
DLPRIVGDP	-0.962019	0.186345	-5.162582	0.0001
DLPRIVGDP(-1)	0.045308	0.184457	0.245630	0.8093
DLPRIVGDP(-2)	-0.442120	0.203446	-2.173155	0.0462
DLPUIVGDP	0.096436	0.139021	0.693674	0.4985
DLPUIVGDP(-1)	0.529130	0.150109	3.524964	0.0031
DLPUIVGDP(-2)	-0.034298	0.141060	-0.243142	0.8112
R-squared	0.943972	Mean dependent var		0.136855
Adjusted R-squared	0.869269	S.D. dependent var		0.357664
S.E. of regression	0.129320	Akaike info criterion		-0.961858
Sum squared resid	0.250854	Schwarz criterion		-0.038138
Log likelihood	38.31344	F-statistic		12.63623
Durbin-Watson stat	2.383577	Prob(F-statistic)		0.000004