Impact of Financial Development on Economic Growth of Pakistan

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Abstract

This research paper demonstrates the association between economic growth and financial development in Pakistan for time period 1979 up to 2008.The procedure of basic elements are used to develop FSDI (financial sector development index) that is utilized to proxy sector Development. With the help of method known as auto regression distributed lag (ARDL), this research paper indicates co integrating association between real deposit rate, real interest rates, financial investment and development. According to the research findings, economic growth is positively related to real deposit rate in long run perspective but its impact is insignificant. Short run as well as long run real interest rates responses are very low in comparison to variable of financial development, giving implications that funds delivery is vital as compared to its cost.

Keywords: Financial Development, Economic Development, Growth

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Prolonged economic growth that is sustainable relies on ability to accelerate the accumulation rates of human as well as physical capital; to utilize the concluding efficient assets more productively and to enable the approach of entire population to these assets. Investment process is supported by financial intermediation by mobilization of foreign and household savings for firm investment, confirming that these funds are distributed to most efficient use and delivering liquidity and risk spreading so that new capacity is operated by forms more efficiently. Financial development consists of institutions expansion and establishment, markets and instruments that provide support to this process of growth and investment. Historically the function of financial intermediaries (both non-bank and bank) that ranges from stock markets to pension funds, usually transform savings of household into monitor investment, enterprise investment and distribute funds and to spread and price risk.

Financial development begins with system of banking and relies upon scriptural income diffusion, which is provided by banking system. The proportion of system of banking falls down within financial sector assets while in the case of institutions that are

more specialized and innovatively new such as insurance companies, building societies, banking system financial assets, retirement funds hold inferior value as compared to financial assets that other financial institutions hold on, where as in categories of under developed countries, economically revenue is regarded true. For many centuries, discussion is going on the function of financial sector in financial development and economic growth. Two fundamental schools of thought are there in this regard. Limited part is played in performing the real activity development by financial development according to first school of thought. According to this school of thought, financial system flourishes only if economy develops. According to second school of thought, financial development plays significant role in facilitating innovation, growth process and economic development.

Shaw (1973), Goldsmith (1969) and McKinnon (1973) were the pioneer's researchers to show significant contribution in terms of association between economic growth and financial development that was main topic of discussion within emerging economies. According to theoretical argument that associates economic growth to financial development is that well established financial system performs many important functions to promote the intermediation productivity by eliminating transaction, information and monitoring costs. Investment is promoted by updated financial system by funding and identifying opportunities of good business, mobilization of savings, evaluates managers performance, promotes hedging, trading and risk diversification that enables the exchange of services and goods. This function performs productive distribution of resources, quick collection of human and physical capital and efficient progress of technology that promotes economic growth. Significant contributions have been made by Pakistan in past few decades to reshape its financial system.

As financial sectors are kept in view as an important component of macroeconomic policy, they produce important economic advantages, mainly through productive domestic savings mobilization as well as productive distribution of resources. From 1947 up to 1980's, Pakistan government was keenly interested in developing significant infrastructure to provide support to various policies of macroeconomics. Financial sector of Pakistan was tightly kept under control. In real terms, interest rates were assigned

negative sign and were administratively set. By means of direct credit allocation, conduction of monetary policy took place. Money market was not fully developed while equity and bond markets were nonexistent from virtual point of view. Commercial banks mostly used to lend minor concern to priority sectors for borrowing profitability of firm. Despite of the fact that financial sector of non-bank was established for investment of private ownership in mid-1980's, financial institutions of public sector held huge quantity of deposits, assets, advances as well as financial sector investments at the closing period of 1980's.

Literature Review

Financial development and growth of economy enjoys a very debatable association. Most of the authors have highlighted finance an vital component of growth including king and Levine (1993), Lucas (1988), McKinnon (1973) and Shaw (1973) where as other authors considers it a small factor of growth (Lucas, 1988).The banking sector was observed as an engine of economic growth via its funding of efficient investment (Schumpeter, 1934).While on the other hand side, Lucas (1968) gave the argument that the finance role has been overstressed.

Financial intermediaries can accelerate capital distribution, efficiency as well as growth by making improvement and efficient changes inside corporate government. King and Levine (1993) utilize monetary indicators and valuation of size and relative significance of banking sector and also traced out positive and important correlation between many other indicators belonging to financial development and GDP per capita growth. More accurately, they tracked a positive and important correlation between liquidity of stock markets and economic growth, but didn't trace out booming association between dimension of economic market and economic growth.

Fink, Haiss, & Mantler (2005) utilize sample consisting of 33 countries (where transition economies makes up 11 percent while market economies makes up 22 percent of the sample population) concluded that if we talk about positive growth impact of financial development, we will take it for short term but not for prolonged term. Fink, Haiss, & Vuksic, (2009) took nine EU-accession countries and researched the effect of credit, bonded stock segments

for a time period of 1996-2000 and brought it in comparison with mature market economies and to countries that exists at intermediate phase. They concluded that transmission mechanisms are different from each other's and financial market segments with its association with public segment (but not in comparison to stock market) applies to sustainability and growth factor within transition economies. Winkler (2009) explained the overall mechanism of quick financial development and related dangers as well as vulnerability in regards to southeastern European countries. He practically provided evidence that the plan of acquiring financial deepening with help of financial banks entry does not assures that financial position will be stable. A strong debate has come in the last decade that well performing financial intermediaries have an important effect on growth of economy.

Research Methodology

ARDL is a type of model, where we employ equation of regression to estimate the dependent variables current a value that imposes upon explanatory variables current values as well as its past period (lagged) values. In this technique, problems of endogeneity are going to be addressed. Modeling of appropriate lags with ARDL will correct for both endogeneity problems and serial correlation. If estimated model of ARDL is free of serial correlation, there are less chances of endogeneity problem. Almost all variables are supposed to be endogenous and we simultaneously estimate long and short run model parameters. As we know that casual association between economic growth and financial development. As we do not ascertain the casual association between economic growth and financial development, so we give relevance to the matter of endogeneity. According to the literature, there lies bidirectional association between economic growth and financial development. The proxy used for development of financial sector is endogenous variable that is used in equation no 1, showing the justification of why we utilize bounds methods. In comparison to co integration tests, ARDL approach has excellent minor properties of sample. In order to examine the underlying association, ARDL approach is very suitable and its usage in empirical research studies is accelerating in present

Timings. ARDL method is represented by following equation:

$$\Delta LRGDP_t=\beta_0+\sum^{p}_{i=1}\beta_{1i}\Delta LRGDP_{t-1}+\sum^{p}_{i=1}\beta_{2i}\Delta LINVG_{t-1}+\sum^{p}_{i=1}+\beta_{3i}\Delta LFSDI_{t-1}+\sum^{p}_{i=1}\beta_{4i}\Delta RIR_{t-1}+^{\delta}_{1}LRGDP_{t-1}+^{\delta}_{2}LINVG_{t-1}+^{\delta}_{3}LFSDI_{t-1}+^{\delta}_{4}RIR_{t-1}+^{\gamma}_{1}WAR+^{\gamma}_{2}FSLD+\mu_t$$

In the above equation stands for lag length, Δ stands for difference operator, and it is assumed that μt is uncorrelated serially. The following steps are involved in this approach. No co integration association null hypothesis which is described as $H0=\delta1=\delta2=\delta3=\delta4=0$ in the first step is analysis in regards to alternative hypothesis of the existence of co integrating association. It is expressed mathematically as $h1\neq\delta1\neq\delta2\neq\delta3\neq\delta4\neq0$.Wald statistics or F test is kept as a basis for the co integration test. Distribution of F test is nonstandard. For test of co integration, two sets of values having critical nature was provided by Pescara and Pescara (1997).According to the assumption of critical value having lower value, all most every variable is assigned I (0) which means that variables are having no co integration and according to the upper bound assumption, all variables are assigned I (1).the upper critical bound is lesser than F statistics. Null hypothesis will not be accepted if upper critical value is lesser than F statistics that suggests that variables are having co integration. But there will be no co integration among variables if lower critical value of bound is greater than computed statistics.

Model Specification

If we follow the standard literature, financial development is proxies by the means of financial depth. There is positive relationship among real interest rate, real income and financial depth according to the prediction of literature review. Due to the existence of complimentarily between capital and money, a positive correlation resulted between the financial depth and the level of Output (Mackinnon, 1973).There is an assumption, investment is categorized as self-finance and lumpy and until and unless if the adequate savings are not concentrated in the shape of bank deposits, investment cannot be materialized. Investment is promoted by financial an intermediary that in response accelerates the output level. (Shaw, 1973).With the help of accelerated volume of mobilization of financial savings, financial depth is accelerated by positive real interest rate and growth is promoted with the help of accelerating the volume of capital efficiency. Positive impact on

average efficiency of physical capital is exerted by high real interest rate which discourages investors that they should not invest inside projects having low returns. Correlation between financial depth and growth is mathematically represented as follow:

$LRGDP_t=\alpha_0+\alpha_1 LFSDI_t+\alpha_2 LINVG_t+\alpha_3 RIR_t+\alpha_4 WAR_{+}\alpha_5 FSLD+\varepsilon_t$

In above equation FSDI stands for financial depth evaluation, RGDP stands for real GDP, RIR stands for deposit rate (real), INVG stands for ratio of GDP business investment, FSDI, real GDP and INVG are presented in natural log, εt stands for error term, WAR stands for dummy variable that is used to highlight financial sector reforms that were introduced in late 1980's by government of Pakistan while FSDL stands for interactive term that is used for highlight Liberalization effect of financial sector.

Data Description

We have discussed three indicators of financial development in this research report namely ratio of private sector credit to GDP, ratio of banking deposit liabilities to GDP and the ratio of private sector credit in domestic credit.

1. The first proxy that we can use for financial development is **the ratio of banking deposit liabilities to GDP** that we calculate by subtraction of circulation currency from M2 and divide it by GDP (nominal).

2. The ratio of domestic credit to the private sector to GDP brings exclusion of public sector and shows more productive allocation of resource in economy since private sector has ability to efficiently and productively utilize funds in comparison to public sector.

3. The next ratio, private sector credit to domestic credit illustrates the credit share to private sector in total domestic credit and also evaluates the limit up to which banking system provides funds to private sector to promote growth and investment.

Result Analysis

Test Analysis of Unit Root

This method is essential to eliminate the hurdles of spurious interpretation. ADF test abbreviation of augmented Dickey-fuller test is applied. In order to estimate the optimal ratio of lags that are

mentioned within the test, AIC and SBC are used that are abbreviations of akaike-information criterion and Schwartz-Bayesian criterion respectively Interpretation gives suggestion that almost every variable belongs to 1 integration. This finding interpretation provides support to the utilization of ARDL method to find out prolong association between different variables. The presence of prolong association between explanatory variables with its GDP gives suggestion of estimation of dynamic parameters of short run and coefficients of long run. ARDL model estimation is focused upon (AIC) 16 that is the abbreviation of Akaike information criterion. The static prolong findings and diagnostic test mathematical figures of estimated model that is focused upon estimates of short run are mentioned in table no.4.

Table 1. Unit Root Test

Variables	lag	ADL test	With trend	ADL test	No trend
LRGDP	1	-1.4902	-4.0077	-0.52159	-4.5257
LFSDI	1	-1.6044	-4.2133	-0.51143	-4.9018
LINVG	1	-1.6566	-5.1899	-1.3886	-5.2099
RIR	0	-3.9921	-	-4.3116	-

Co integration Result Analysis

We are going to utilize a lag length having an order of 2 within bound test according to the annual data use and a minor size of sample (38).In terms of annual data, shin and Pescara (2007) have given suggestion to use 2 lags maximum. Table 2 illustrates the bound test interpretations.

Table 2. Result Analysis of Bound Test

Test statistics	value	lag		Bound critical values	Restricted intercept
F statistics	4.4378	2	-	I (0)	I (1)
F statistics	-	-	1%	4.321	5.900
F statistics	-	-	5%	3.115	4.907
F statistics	-	-	10%	2.512	3.991

For model, 4.4374 is the value of F statistic that is accelerated than the value of upper critical bound (4.095) at significance level of 5.this finding gives suggestion that there is prolong association among financial development index (FDI), the ratio of GDP investment, real GDP and deposit rate (real).when we

choose FDI as independent variable, there is no proof of presence of co integrating association because the value of calculated F statistics (1.4415) is lower than the value of lower critical bound (3.117).

Result of Long Run Statistics

The presence of prolong association between explanatory variables with its GDP gives suggestion of estimation of dynamic parameters of short run and coefficients of long run. ARDL model estimation is focused upon (AIC) 16 that is the abbreviation of Akaike information criterion. The static prolong findings and diagnostic test mathematical figures of estimated model that is focused upon estimates of short run are mentioned in table no.4.

Table 3. Long run estimates based on AIC-ARDL (1, 0, 0, 0, and 3)

Variable	Coefficient	Standard error	T ratio
LFSDI	0.46398	0.082507	5.6237
LINVG	0.25567	0.12855	1.9891
RIR	0.0030792	0.0010466	2.9422
FSLD	-0.0085178	0.0086906	-0.98012
INPT	0.22147	0.22147	38.8038

Note. Dependent variable is LFSDI

Dynamics of Short Run

The interpretations of dynamics of short run that was interlinked with ARDL (1, 0, 0, 1, 2) are illustrated within table 5.we have assigned negative value to the coefficient of lagged of error term (-0.73798) and it is significant statistically at level of 1 percent. The significant negative coefficient is the symbol of co integrating association among financial development, real GDP, deposit rate (real) and investment.

Table 4. Results of Short Run Dynamics

Variable	Coefficient	Standard error	T ratio
DlFSDI	0.34242	0.092601	3.6978
DLINVG	0.18868	0.11091	1.7013
DRIR	0.0022723	0.0007488	3.0351
DFSLD	-0.026605	0.011562	-2.3014

Stability and Diagnostic Test Analysis

ARDL model which is estimated shows findings of its diagnostic tests that models has cleared serial correlation tests,

misspecification of functional form and errors that are non-normal but hurdle of heteroscedasticity is present there. As we knows that time series of ARDL equation that is estimated shows mixed integration order I.e. I (1) and I (0), to track out heteroscedasticity is a natural phenomenon. There is plot of stability tests of CUSUM and CUSUMSQ within figure 3 shows estimated model coefficients and illustrates that they are stable during period of study because they lies within critical bounds range.

Construction of FDI

PCA is a component of principle analysis that is utilized to develop FDI index with help of financial development three proxies. This eliminates potentially accelerated association between various evaluations of development of finance sector.

Table 5. Financial Sector Development Index (FSDI)

Year	FDSI
1970	22.4
1975	15.07
1985	5.46
1989	9.76
1993	11.9
1994	3.58
1995	3.38
1996	3.36
2006	16.3
2007	19.6
2008	18.9

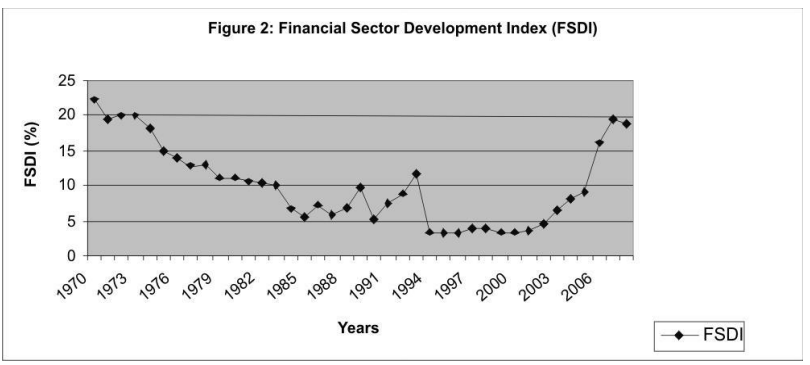

Figure 1. Financial Development Sector Index

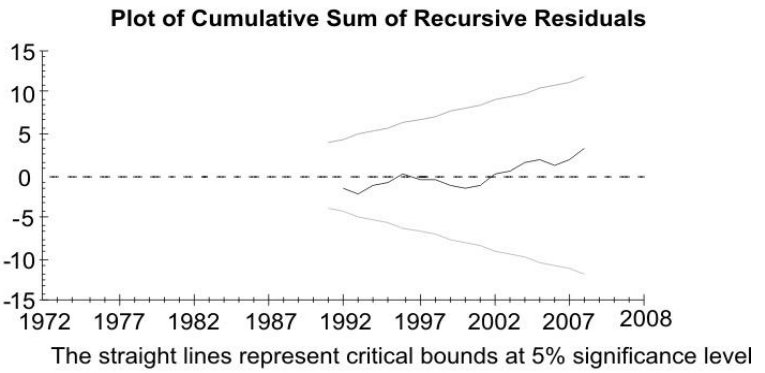

Figure 2. CUSUMSQ Plots for test of stability

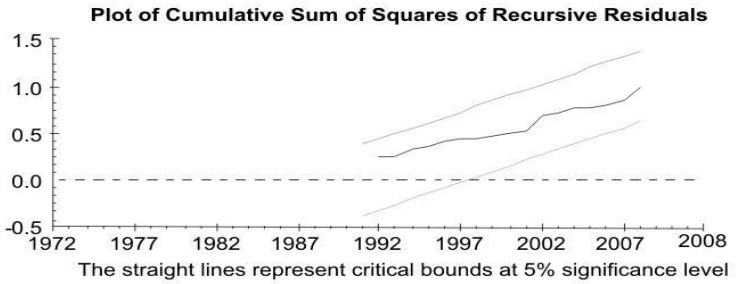

Figure 3. CUSUMS Plots for test of stability

Conclusion and Recommendations

This research paper has figured out association between economic growth and financial development in Pakistan over time period from 1979 up to 2008.For the estimation of prolong association and short run model's dynamic parameters, we adopted bounds testing approach to co integration The test gives suggestion that a unique co integrating association is present between financial development, real GDP, real deposit rate and investment. From long run and short run point of view, investment ratio to GDP, financial development index and deposit rate (real) applied positive impacts upon economic growth.

It confirms the presence of prolong association between GDP as well as its determinants. The coefficient magnitude give implications that disequilibrium 74 percent caused by stock of last year's converges back to equilibrium long run in the present year. According to the suggestions given by plots of CUSUM and CUSUMSQ test, there is presence of stable association between financial development and economic growth.

According to the findings indications, a country can stimulate its economic growth if it adopts both long run and short run policies to enable financial sector development. Therefore suggestions of policy for optimum economic growth will be available for policy makers to enhance the financial institutions establishment to accelerate delivery of credit to private sector particularly in rural areas. Having limited approach to financial services; create the legal atmosphere for transparent and productive credit distribution to private sector with the help of reforms adoption to strengthens rights of creditor and encourages commercial agreements; to encourage the functioning and operation of Pakistan's stock exchange which is considered to be source of medium and prolong finance for investment.

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