

## **What Matters for Financial Development in D-8 Countries? Capital Flows, Trade Openness and Institutions**

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There is a broad consensus in the finance-growth literature that, with few exceptions, there exists a positive long run relationship between financial development and economic growth. As a result of this widespread consensus, the finance-growth literature has recently begun to shift its attention towards the determinants of financial development. The present study has been conducted to examine the impact of capital flows, trade openness and institutions on the financial development of D-8 countries. Using dynamic panel data techniques for the period 1985 to 2008, the study finds that capital flows, trade openness and institutions are the significant determinates of financial development in D-8 countries. The findings of the study are robust to alternative measures of financial development, as well as estimation method.

“The financial models of the advanced countries are now in some disrepute. What will replace them is still up for grabs. For poorer countries, seeking to develop their financial systems, that means the destination is no longer clear and will not be for some time. That anchor has been removed and will not be replaced until a new system is in place and has functioned for long enough to earn confidence.” (Growth Commission, 2010, p. 25)

### **1. Introduction**

The financial sector plays a vital role in the economic development of an economy. Considerable theoretical and empirical literature on the finance – growth association shows a positive relationship between the

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measures of financial sector development and economic growth<sup>2</sup>. Financial development increases the economic growth by increasing the ratio of savings to gross domestic product (GDP). The increase in savings will boost the investment and thus the economic growth. Similarly, the marginal productivity of capital will increase that will boost the income of the economy (Yucel, 2009).

Trade openness leads to the expansion of the market, induces an increase in research and development, and reallocates employment to more innovative activities. This promotes the use of a broad spectrum of financial instruments and a passage to foreign financial institutions, which eliminates restrictions on business practices. All these measures result in reducing distortions and volatility in capital inflows, eventually leading to the development of the financial sector. Theory suggests that capital account liberalization can lead to development of financial systems through several channels: firstly, it may mitigate financial repression in protected financial markets, allowing the (real) interest rate to rise to its competitive market equilibrium;<sup>3</sup> secondly, removing capital controls allows domestic and foreign investors to engage in more portfolio diversification; and thirdly, the liberalization process usually increases the efficiency level of the financial system by weeding out inefficient financial institutions and creating greater pressure for a reform of the financial infrastructure.<sup>4</sup> Such improvement in financial infrastructure may alleviate information asymmetry, decreasing adverse selection and moral hazard, and further raising the availability of credit.<sup>5</sup>

However, the experience of Southeast Asian crisis shows that free financial flows are not always desirable as developing countries tend to make themselves vulnerable to sudden and destabilizing withdrawals as in case of South east Asian countries.<sup>6</sup> A large number of studies argue that a country's financial development is related to its institutional characteristics including its legal framework. The uneven development

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<sup>2</sup> See for instance, King and Levine (1993a,b), Levine (1997), Allen and Ndikumana (1998), Demirgüç-Kunt and Maksimovic (1998), Rajan and Zingales (1998), Christopoulos and Tsionas (2004), Honohan (2004), Hondroyannis et al. (2005), Jalil and Ying (2008), and Ahmad and Aisha (2009).

<sup>3</sup> McKinnon (1973) and Shaw (1973).

<sup>4</sup> Stultz (1999); Stiglitz (2000) and Claesens et al., (2001).

<sup>5</sup> Chinn and Ito (2005)

<sup>6</sup> Bailliu (2000)

of the financial systems across the developing countries can largely be explained in terms of lack of financial regulations and varying effectiveness of the legal systems.<sup>7</sup>

While the role of finance in promoting growth in the developed world is well researched and documented, the lack of research on such an important issue facing the financially underdeveloped countries is a serious omission. Indeed it is very important to know the factors that prevent financial development of these countries despite the enormous benefits ensuing from such a policy. The objective of this study therefore is to examine the determinants of financial development in the group of eight developing countries (D-8) based on the theoretical postulates from capital account liberalization, quality of institutions and trade openness perspectives. The D-8 is a group of developing countries with large Muslim populations that have formed an economic development alliance. It includes Bangladesh, Egypt, Indonesia, Iran, Malaysia, Nigeria, Pakistan, and Turkey. The combined population of the eight countries is about 60 percent of the Muslim population, or close to 13 percent of the world population. The objectives of D-8 group are to improve developing countries' positions in the world economy, diversify and create new opportunities in trade relations, enhance participation in decision-making at the international level, and provide better standards of living. The main areas of cooperation include finance, banking, rural development, science and technology, humanitarian development, agriculture, energy, environment, and health. Like many other developing countries, there has been less work on the role of capital flows, trade openness and institutions in financial sector development of D-8 countries and this study will contribute to the emerging literature.

## **2. A Selective Review of Literature**

In contrast to the large body of cross country work examining the relationship between finance and growth, literature investigating the impact of capital inflows, trade openness and institutional quality on financial development is fairly small. Empirical work on the importance and relevance of legal systems for financial development has its origins in the study by La Porta et.al., (1997). This study correlates the relation

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<sup>7</sup> Arestis and Demetriades (1997)

between the legal systems and financial intermediary development across 49 countries governed by four legal systems; English common law, French, German and Scandinavian civil laws. They find that the quantity of external finances is, in part, determined by legal tradition. They also show that in the area of protection against expropriation by insiders, common law countries protected both shareholders and creditors the most, French civil law countries the least, and the German and the Scandinavian civil law countries lie somewhere in between. Findings of this study are supported by Beck et.al., (2001), they show that difference in legal origins help explain the development of financial markets today. Countries with French legal tradition tend to have weak financial institutions, while common law and civil law countries have comparatively strong financial institutions.

Rajan and Zingales (2003) examine the difference in the proficiency of financial depth across countries in a historical perspective over the period 1913 to 1999. They argue that the ruling class opposes financial development because it produces fewer benefits for them than for potential competitors. In the absence of funds from the financial sector the ruling class can finance their investments through retained earnings, whereas potential competitors lack finances. Thus when a country is open to trade and capital flows it promotes financial development which breeds competition and threatens the rents of the ruling class. This implies that open borders help to check the political and economic elites and preserve competitive markets. Using dynamic panel data techniques and data from 43 developing countries during 1980 – 2001, Law and Demetriades (2006) that openness and institutions are important determinants of financial development. Baltagi et.al.,(2007) show that trade and financial openness, as well as economic institutions are statistically important determinants of the variation in financial development across countries and over time since the 1980s. However, they find mixed support for the hypothesis that the simultaneous opening of both trade and capital accounts is necessary to promote financial development in a contemporary setting. Law and Muzafar (2009) examine the determinants of financial development based on the theoretical postulates from financial liberalization, institutional and openness perspectives using the data for 27 countries over the period 1980 to 2001. The dynamic panel data analysis results demonstrate that real income per capita and institutional quality are statistically significant determinants of banking sector development and capital

market development. The trade openness, however, is more prominent in promoting capital market development.

From the above analysis it is quite apparent that there is shift in the direction of analysis from mere finance-growth towards discovering the sources of variation in the financial sector development of different countries. Despite the fact that the literature is scant on this topic the significance of determinants of financial development cannot be overlooked. Unfortunately, no research effort has been made in the past to examine the role of capital inflows, trade openness and institutional quality in the financial sector development of D-8 group of countries. The present study will fill this vacuum by providing some evidence on the influence of political and economic factors on the financial sector development of these countries.

### **3. Model, Data and Estimation**

#### **3.1. The Model**

The theoretical literature predicts financial development to be a positive function of real income and the real interest rate. This is based on McKinnon-Shaw type models and the endogenous growth literature. In the models of McKinnon (1973) and Shaw (1973) the positive relationship between financial development and the level of output results from the complementarity between money and capital. It is assumed that investment is lumpy and self-financed and hence cannot be materialized unless adequate savings are accumulated in the form of bank deposits. In Shaw's model financial markets through debt intermediation, promote investment which, in turn, raises the level of output. A positive real interest rate in these models promotes financial development through the increased volume of financial saving mobilization and stimulates growth through increasing the volume and productivity of capital. Higher real interest rates exert a positive effect on the average productivity of physical capital by discouraging investors from investing in low return projects (Fry, 1997). The endogenous growth literature also predicts a positive relationship between financial development, real income and the real interest rate (King and Levine, 1993). Based on these theoretical postulates, a financial development relationship can be specified as:

$$FD = f(RGDPC, R), \quad (1)$$

where FD is financial development, RGDP is the real GDP per capita and R is the real interest rate.

Recently, the role of capital account openness, trade openness and institutions in influencing financial development has also received attention in the literature<sup>8</sup>. Therefore, Equation (1) is extended to incorporate capital flows, trade openness and institutions in order to examine the possible separate influence of these variables on financial development. Thus, the basic financial development equation is specified as follows:

$$FD = f(RGDPC, R, CF, TO, INS), \quad (2)$$

where CF, TO and INS are respectively capital flows, trade openness and institutions. Equation (2) provides the basis for the empirical model that will be estimated in this paper. We specify the following log-linear equation for financial development.

$$\ln FD_{it} = \alpha_0 + \alpha_1 \ln RGDP_{it} + \alpha_2 R_{it} + \alpha_3 \ln CF_{it} + \alpha_4 \ln TO_{it} + \alpha_5 \ln INS_{it} + \varepsilon_{it} \quad (3)$$

For estimating equation (3), two dynamic panel data techniques, namely the Generalized Method of Moments (GMM) and the Pooled Mean Group (PMG) estimator are employed.

### 3.2. Panel GMM Estimation<sup>9</sup>

We use the Generalized Method of Moments (GMM) estimation technique developed for dynamic panel data that was introduced by Arellano and Bond (1991), Arellano and Bover (1995), and Blundell and Bond (1998). This technique accounts for unobserved country-specific effects, allows for the inclusion of lagged dependent variables as regressors and controls for endogeneity of all the explanatory variables. The starting point is a standard specification in levels, where the

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<sup>8</sup> See for instance, Arestis and Demetriades (1997), Chinn and Ito (2002), Demetriades and Andrianova (2004), Chinn and Ito (2005), Huang and Temple (2005), Baltagi et.al., (2007), Herger et.al.,(2007) and Law and Muzafar (2009).

<sup>9</sup> Sections III.2 is mainly based on Law and Muzafar (2009).

financial development (FD) is persistent, i.e., it is a function of its own past values. The model includes a set of independent variables  $X_{it}$ , which are assumed to be weakly exogenous, and a country fixed effect  $\mu_1$

$$FD_{it} = \delta FD_{i,t-1} + \lambda X_{it} + \mu_1 + \varepsilon_{it} . \quad (4)$$

After taking first differences, equation (4) yields:

$$\Delta FD_{it} = \delta \Delta FD_{i,t-1} + \lambda \Delta X_{it} + \Delta \varepsilon_{it} \quad (5)$$

Note that in taking the first differences the country fixed effects are dropped out from the model, while the slope coefficients remain the same as in equation (4).

A key problem with the model in equation (5) is the potential endogeneity of the control variables<sup>10</sup> as well as the correlation between the lagged dependent variable  $FD_{i,t-1}$  and the error term  $\varepsilon_{it}$ . This problem can be solved by using higher-order lags of  $FD_{i,t-1}$  as instruments for  $FD_{i,t-1}$ . For the GMM estimator to yield unbiased and consistent estimators requires the validity of the moment conditions

$$E[\Delta \varepsilon_{it} FD_{i,t-k}] = E[\Delta \varepsilon_{it} X_{i,t-k}] = 0 \quad \forall k > 1 \quad (6)$$

A special feature of dynamic panel data GMM estimation is that the number of moment conditions increase with T. Therefore a Sargan test is performed to test the over-identification restrictions. There is convincing evidence that too many moment conditions introduce bias while increasing efficiency. It is therefore suggested that a subset of these moment conditions be used to take advantage of the trade-off between the reduction in bias and the loss in efficiency (see Baltagi, 2005).

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<sup>10</sup> Some past studies have shown a bi-directional causal relationship between financial development and economic growth (See for instance, Demetriades and Hussein, 1996; Luintel and Khan, 1999; Katircioglu et al., 2007; Yucel, 2009).

### 3.3. Pooled Mean Group Estimation

The Pooled Mean Group (PMG) estimation proposed by Pesaran et. al., (1999) is well suited to the analysis of dynamic panels, as it has the advantage of being able to accommodate both the long run equilibrium and the possibly heterogeneous dynamic adjustment process. Panel methods have become popular in cross sectional macro data sets, since they provide greater power than individual country studies and hence greater efficiency. In PMG estimation, only the long run coefficients are constrained to be the same across countries, while the short run coefficients are allowed to vary. Setting this out more precisely, the unrestricted specification for the autoregressive distributed lag (ARDL) system of equations for  $t=1,2,\dots,T$  time periods and  $i=1,2,\dots,N$  countries for the dependent variable  $y$  is:

$$y_{it} = \sum_{j=1}^m \phi_{ij} \Delta y_{i,t-j} + \sum_{j=0}^n \gamma'_{ij} \Delta x_{i,t-j} + \mu_i + u_{it} \quad (7)$$

where  $x_{it}$  is the  $(k \times 1)$  vector of explanatory variables for group  $i$  and  $\mu_i$  represents the fixed effects. In principle the panel can be unbalanced and  $m$  and  $n$  may vary across countries. This model can be re-parameterized as a vector error correction model (VECM) system

$$\Delta y_{it} = \theta_i (y_{i,t-1} - \beta'_i x_{i,t-1}) + \sum_{j=1}^{m-1} \phi_{ij} \Delta y_{i,t-1} + \sum_{j=0}^{n-1} \varpi'_j \Delta x_{i,t-j} + \mu_i + u_{it} \quad (8)$$

where  $\beta_i$ 's are the long run parameters and  $\theta_i$ 's are the error correction parameters. The pooled group restriction is that the elements of  $\beta$  are common across countries, so that

$$\Delta y_{it} = \theta (y_{i,t-1} - \beta'_i x_{i,t-1}) + \sum_{j=1}^{m-1} \phi_{ij} \Delta y_{i,t-1} + \sum_{j=0}^{n-1} \varpi'_j \Delta x_{i,t-j} + \mu_i + u_{it} \quad (9)$$

All the dynamics and the error correction model (ECM) terms are free to vary. Estimation of this model is by maximum likelihood. The hypothesis of homogeneity of the long run policy parameters cannot be assumed a priori and is tested empirically in all specifications by a Hausman-type test (Hausman, 1978). The PMG estimations require



selecting the appropriate lag length for the individual country equations. This selection is made using the Schwarz Bayesian Criterion (SBC).

### 3.4. Data

The required data set consists of a panel of observations for D-8 group of countries for the period 1985 to 2008. An important advantage of using panel data is that these capture both time series and cross section variations in variables. Several measures of financial development have been proposed in the empirical literature. Quantity indicators based on monetary and credit aggregates are the traditional measures of financial development and deepening. Although they may not be able to assess accurately a country's financial development (Lynch, 1996) they are the only indicators readily available in the monetary survey in IMF Statistics especially for developing countries. The study, therefore, has used liquid liabilities (LL) and private sector credit (PSD) as indicators of financial sector development. The liquid liabilities indicator (LL) represents the ratio of liquid liabilities to GDP, where liquid liabilities consist of currency held outside the banking system plus demand and interest bearing liabilities of banks and non-bank financial intermediaries. Since LL reflects the overall size of the financial intermediary sector it is a typical measure of financial depth. It does not, however, distinguish between the allocation of capital to the private sector and to various governmental and quasi-governmental agencies. In an effort to isolate credit issued to the private sector alone and not to governments, government agencies and public enterprises, we will also consider the indicator private sector credit (PSD) which equals the value of credits by financial intermediaries to the private sector as a ratio of GDP. This measure of financial development is a measure of financial sector activity. Both these series have been sourced from the World Bank's World Development Indicators (2009) henceforth WDI and updated version of Financial Structure Database (Beck et. al., 2009).

The trade openness (TO) indicator employed in the analysis is proxied by total trade (the sum of exports and imports) over GDP, whereas the capital flows (CF) indicator is proxied by gross private capital flows (the sum of capital inflows and outflows) over GDP. Both variables have been obtained from the WDI. Annual data on real GDP per capita (RGDPC) have been collected from the WDI based on the constant US dollar prices for the year 2000. Data for real interest rate have been

sourced from WDI. The institutions (INS) data set employed in this study was assembled by the IRIS Centre of the University Maryland from the International Country Risk Guide (ICRG) – a monthly publication of Political Risk Services (PRS). Following Knack and Keefer (1995), five PRS indicators used to measure the overall institutional environment are: (i) Corruption; (ii) Rule of Law; (iii) Bureaucratic Quality; (iv) Government Repudiation of Contracts; and (v) Risk of Expropriation. The above first three variables are scaled from 0 to 6, whereas the last two variables are scaled from 0 to 10. Higher values imply better institutional quality and vice versa. Since all these aspects of the institutional environment are likely to be relevant for the security of property rights, the institutions indicator is obtained by summing the above five indicators<sup>11</sup>. Finally, it is worth mentioning that consistent time series data for Iran are not available, so we have excluded Iran from our sample.

Tables 1 and 2 indicate the correlation among the variables, each of which corresponds to the two financial development indicators; liquid liabilities and private sector credit. As shown in both the tables, the financial development indicators are positively correlated with real GDP per capita, interest rate, capital inflows, trade openness and institutions. For example, the capital flows, trade openness and institutions have a positive correlation of 0.49, 0.48 and 0.43 respectively, with liquid liabilities and a positive correlation of 0.44, 0.46 and 0.59 respectively with private sector credit.

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<sup>11</sup>The scale of corruption, the rule of law and bureaucratic quality were first converted to 0 to 10 (multiplying them by 5/3) to make them comparable to the other indicators. Numerous studies have employed this data set in the empirical analysis, among others Knack and Keefer (1995), Hall and Jones (1999), Chong and Calderon (2000), Clarke (2001), and Law (2009).

**Table 1. Correlations Matrix. Financial Development Proxy: LL**

LTO	LL INS	LRGDPC	R	LCF
LL	1.0000			
LRGDPC	0.6154	1.0000		
R	0.1972	0.3133	1.0000	
LCF	0.4955	0.4394	0.2341	1.0000
LTO 1.0000	0.4821	0.4266	0.2487	0.3862
INS 0.3969	0.4367 1.0000	0.4763	0.3259	0.4156

**Table 2. Correlations Matrix. Financial Development Proxy: PSC**

LTO	PSC INS	LRGDPC	R	LCF
PSC	1.0000			
LRGDPC	0.6736	1.0000		
R	0.1847	0.2511	1.0000	
LCF	0.4459	0.4063	0.2957	1.0000
LTO 1.0000	0.4681	0.4662	0.3141	0.3836
INS 0.3784	0.5926 1.0000	0.4555	0.2815	0.4112

#### 4. Results and Discussion

The empirical results of the study are reported in tables 3 and 4 respectively using liquid liabilities (LL) and private sector credit (PSD) proxies for financial development.

**Table 3. Results of Dynamic Panel Data GMM Estimation  
(Dependent Variable: Financial Development)**

Variables	Model 1	Model 2
	LL	PSD
Constant	-0.07 (-0.94)	-0.04 (-0.57)
LRGDPC	0.47 (12.17)***	0.53 (6.561)***
R	0.01 (0.27)	0.03 (0.63)
LCF	0.12 (16.82)***	0.18 (6.25)***
LTO	0.17 (5.65)***	0.29 (7.97)***
LINS	0.29 (2.19)**	0.47 (3.41)***
FD <sub>it-1</sub>	0.68 (9.55)***	0.74 (10.42)***
Sargan Test	13.56 (0.35)	17.88 (0.24)
N	7	7
T	24	24

Notes: Figures in parentheses are t-statistic except for Sargan test, which is p-value.  
\*\*\* and \*\* indicate significance at the 1% and 5% levels, respectively.

Table 3 reports the results for GMM estimation technique. To begin with, the estimated coefficients of both the liquid liabilities and the private sector credit are positively related with the real GDP per capita. These results suggest that economic growth seems to lead to the financial development. It is important to note that signs of the estimated coefficient on real GDP per capita are consistent with our expectations. Economic growth causes financial institutions to change and develop,

and financial as well as credit market to grow ( Yucel,2009). The financial development is demand driven and economic growth leads to the increase in the aggregate demand. For real interest rate we find insignificant results in both the models. Therefore, the findings of the study imply that interest rate is an insignificant determinant of financial development in D-8 countries. In both the models capital flows term enters with positive and highly significant coefficient. This result is validating the predictions of Klien and Olivei (1999) that capital flows liberalization will foster the financial development. However, Chinn and Ito (2005) find that capital account liberalization contribute to financial development but only when a threshold level of general development of legal systems and institutions has been attained. They find that financial development appears to depend upon capital account openness both individually and in interaction with the level of legal development.

A positive association is observed amongst the trade openness and both measures of financial development. Model 1 indicates that a 1 percent increase in the trade openness will improves the liquid liabilities by 0.17 units. Whereas under model 2, a 1 percent increase in trade openness boosts the private sector credit by 0.29 units. With the openness of trade the demand for the finance increases and this leads to the financial development. The positive relation is in line with the findings of Haung and Temple (2005) that improvement in the financial sector is due to the enhancement of trade openness. Trade openness by increasing the efficiency of technology (through knowledge spillovers) might increase the payoff to financing young entrepreneurs, fostering the formation of active capital markets and avoiding “low growth trap” equilibria (Ginebri, Petrioli and Sabani, 2001). Similarly Svaleryd and Vlachos (2002) find a positive and economically significant relationship between financial development and liberal trade policies. In their view openness to trade will create new demands for external finance which will thus encourage the development of financial markets.

The institutional quality is proven to be a significant determinant of financial development in both the models. The results indicate that institutional quality matters for financial development and these results support the findings of Chin and Ito (2002) and Demetriades and Andrianova (2004). Furthermore, these results are also in accordance with law and finance theory which asserts that in countries where legal systems enforce private property rights, support private contractual arrangements and protect the legal right of investors, savers are more

willing to finance firms, and financial markets prosper (Dorrucci, 2009). The institutional quality makes a lot of difference in the financial development because with the improvement in institutional setup the availability of finance becomes easier and also the confidence within a society increases. Countries with legal and regulatory systems that give a high priority to creditors receiving the full present value of their claims on corporations have better functioning financial intermediaries than countries where the legal system provides much weaker support to creditors (Levine,1999). The lagged dependent variable is statistically significant, which implies that the dynamic GMM is an appropriate estimator and the empirical results are reliable to carry out the statistical inference. The Sargan test does not detect any problem with instrument validity, and the instrumental variables therefore seem to be valid and highly informative.

**Table 4.Pooled Mean Group Estimation for ARDL  
(Dependent Variable: Financial Development)**

	Model 1	Model 2
Variables	LL	PD
LRGDPC	0.33 (3.21)***	0.26 (2.97)***
R	0.04 (0.84)	0.03 (0.48)
LCF	0.39 (3.58)***	0.17 (1.89)*
LTO	0.11 (1.87)*	0.08 (1.33)
LINS	0.24 (2.45)**	0.35 (3.42)***
ECT(-1)	-0.24 (-6.74)***	-0.15 (4.97)***
Joint Hausman Test for Joint Heterogeneity	4.36 (0.52)	5.87 (0.47)

Notes:Figures in parentheses are t-statistic except for Hausman test, which is p-value. \*\*\*, \*\* and \* indicate significance at the 1%, 5% and 10% levels, respectively.

The results for PMG estimation reported in table 4 present estimates of the long run coefficients, the adjustment coefficients and Hausman test statistic. The lag order is first chosen in each country on the unrestricted model by the Schwarz Bayesian Criterion (SBC), subject to a maximum lag of 1, then using these SBC-determined lag orders, homogeneity is imposed. One of the strengths of the PMG framework is the fact that it allows formal testing, using a Hausman test, of whether the assumption of long run homogeneity across countries is valid. The results in the both models indicate that the joint Hausman test statistic fails to reject the null hypothesis of homogeneity of slopes in the long run is not rejected for all variables jointly. It implies that the data do not reject the restriction of common long run coefficients, so pooling the data (by using the PMG estimator) appears to be a preferable and more informative procedure.

Results for all the explanatory variables are similar to those with the panel GMM estimator. The coefficients of real GDP per capita, capital flows, trade openness and institutions are positive and statistically significant for both proxies of financial development. These findings further validate the results obtained in the panel GMM estimator (see table 3). All this implies that financial flows, trade openness and institutions are significant determinants of financial development in D-8 countries while real interest rate again appears as an insignificant determinant of financial development. The error correction term (ECT) is significant in both the models and gives evidence of mean reversion to the long run relationship. However, in model 1 speed of adjustment to long run equilibrium is relatively greater than that of model 2.

## **5. Conclusion**

The role of finance in promoting growth is well researched and documented in the literature. It has also been extensively documented that the level of financial development varies greatly across countries. Recently, the finance-growth literature has focused on the financial development policies issues, namely the sources of financial development. The present study has been conducted to examine the impact of capital flows, trade openness and institutions on the financial development of D-8 countries. In this regard data for the seven member countries of this group have been used for the time period 1985 to 2008, owing to data limitations, Iran is excluded from the sample. Two

Different dynamic panel data estimation techniques, panel generalized method of moments (GMM) and pooled group mean (PGM) estimator, have been applied in the study.

There are different proxies used for financial development. However, the present study has used liquid liabilities and private sector credit as proxies for financial development in D-8 countries. Two models have been estimated for each of these two proxies of financial development. The panel GMM and the PGM estimator techniques produce similar results for both the models. We find that real GDP per capita, capital flows, trade openness and institutions are positively and significantly associated with the financial development of D-8 countries. These results highlight the significance of level of economic growth, free flow of capital, trade liberalization and institutional quality in the enhancement of financial development. Real interest rate turns out to be an insignificant determinant of financial development which is not surprising considering that interest rates are usually controlled in developing countries. On the basis of the findings of this study it is recommended that stimulating foreign capital flows and trade openness, improving institutions and economic growth will encourage financial development in D-8 countries.



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