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## Financial Globalization and Financial Sector Effectiveness: An Index Based Analysis of Pakistan

### ABSTRACT

This paper tried to assess the nature of relationship between financial sector openness and financial sector deepening for Pakistan. The study utilized data set of annual frequency on financial sector openness index, institutional quality index, trade openness and a set of control variables over a period from 1995 to 2018. The application of econometric method of Autoregressive Distributed Lag Model (ARDL) confirmed the extensively debated long run association, and after having established this, found the estimates (both short run and long run). Results demonstrated that financial openness and institutional quality improve the quality of financial sector efficiency in Pakistan for short run; however, in the long run financial openness did not lead financial sector development. These findings indicate that policies promote financial sector openness appear to help Pakistan to derive the benefits of quality of financial sector efficiency. Our analysis suggests that there are unavoidable risks associated with financial sector openness. Therefore financial openness is not just an isolated policy goal. Along with institutional quality sounds macroeconomics framework is an essential prerequisite for making sure that financial development is beneficial.

### Keywords

Financial Globalization, Chinn-Ito Index, World Governance Indicator, Efficiency of Financial Sector

### JEL Classification

G30, G10, G18

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## 1. INTRODUCTION

Financial development (FD) is a process that brings a continuous improvement in efficiency of scarce resources distribution (Luo *et al.*, 2016). There is an ongoing debate on importance of financial sector performance to achieve sustainable development in developed and developing economies (Levine 2003; Goodhart, 2004; Huang, 2006; Ang & Mckibin, 2007). Levine (2003) demonstrated that an efficiently working financial sector catalyzes the process of economic growth through saving mobilization, improvement of information gathering, corporate governance evaluating projects and risk diversification. The importance of FD to achieve sustainable economic growth could not be denied hence the interest in examining the factors, which promote FD, is enlarging over the time. Contrary to this, Barajas *et al.* (2013) and Stiglitz (1991) who pointed towards the negative distributional effects and shocks associated with financial sector apart from the advantages of this sector.

Several studies identified the factors, which enhance the efficiency of financial sector. In this regard, an empirical study by Voghouei *et al.* (2011) has a great contribution in literature to amplify the factors, responsible for better functioning of financial sector. The study highlighted that financial sector openness coupled with institutional quality, legal origin, trade openness and political economy could be responsible for a better functioning of financial sector. Moreover, theoretically, the *law and finance hypothesis* advanced by La Porta *et al.* (1997) and, La Porta & Lopez de Silanes *et al.* (1998) supported the argument that legal traditions help towards enforcement of contracts, property rights protection. The argument explained that different legal traditions creates differences in level of financial development Acemoglu & Robinson (2005). In the same context, *The Endowment Hypothesis* by Acemoglu *et al.* (2001) pointed that initial endowments possessed by countries are responsible for differences in financial sector development across the countries. In addition, *The Simultaneous Openness Hypothesis* by Rajan and Zingales (2003) proposed that simultaneous opening of trade and financial sector serves as a channel to promote efficiency of financial sector, and finally *The Economic Institutions Hypothesis* presented by Acemoglu (2004) highlighted the importance of different socio economic and political factors, responsible for differences in financial sector development and hence economic development.

The concept and idea of financial sector openness introduced by Mckinnon and Shaw (1973) presented a framework, which asserted the importance of high interest rate to avail more financing by mobilizing scarce resources. There is sufficient evidence available, which theoretically supports the proposition that financial openness brings more savings through enhancing more competition, raising returns on pooled funds and branching out of risk Klein & Olivei, (2008). Advocates of financial opening contend that financial repression retains interest rate below the market rate instigating saving and investment deterioration Klein & Olivei, (2008). A recent study by Arestis (2006) defined the process of financial liberalization as a sum of autonomy of central bank, removal of entry barriers to financial sectors, privatization of financial sector and determination of interest rate because of market forces of demand and supply. In addition, contrary to this, there are limited numbers of studies, stating that financial liberalization causes banking crisis (Demirguc-Kunt & Maksimovic 1998), however, this risk of financial fragility could be reduced by developing more economic institutions. The literature which so far exists in the area of financial globalization generally studies the relationship between financial globalization and economic growth, through various dimensions of reforms of financial openness. Ang and Mckibbin (2005), examine the impact of financial liberalization on various macroeconomic variables like growth, investment or saving. The literature which so far exists in the area of financial globalization generally studies the relationship between financial globalization and economic growth, through various dimensions of reforms of financial openness. Ang and Mckibbin (2005), examine the impact of financial liberalization on various macroeconomic variables like growth, investment or saving. In contrast to this, our study investigates the relationship between financial sector globalization and financial openness by using Chinn-Ito1 Index for financial openness. In contrast to this, our study investigates the relationship

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<sup>1</sup> Data on Chinn-Ito index is found at <http://www.ssc.wisc.edu/~mchinn/research.html>

between financial sector globalization and financial openness by using Chinn-Ito<sup>2</sup> Index for financial openness. Against the recent economic and financial meltdown, current research tries to check the following hypotheses:

**H<sub>1</sub>:** There is a positive and significant relationship between financial sector openness and financial development

**H<sub>2</sub>:** There exists a positive and robust link between governance index and financial development index.

**H<sub>3</sub>:** There is a positive and significant relationship between Real GDP and financial development index

**H<sub>4</sub>:** There is a positive and significant relationship between trade openness and financial development

The study is planned as follows: Following introduction, brief background, and empirical studies, in section one, section two briefly states the state and trends of financial sector openness in Pakistan. Section three describes details on data, sources of data, variables construction, model and methodology in detail. Section four elucidates the empirical results and final section delivers conclusion and policy recommendations.

## 2. FINANCIAL SECTOR OPENNESS IN PAKISTAN

Nationalization policies implemented by Pakistani financial sector, characterized by directed credit program could not produce the desired outcomes of socioeconomic development. Because of bank nationalization act (1974), 92% of banking sector was owned by public sector and rests of all other were foreign banks. Hussein (2004) highlighted the need of financial reforms with privatization policies stating that public owned banks are not optimally performing due to high administrative costs, overstaffing, and directed credit program to support government in order to fulfil fiscal deficit. Moreover, it is characterized by incidence of high tax rates on banking and corporate sector, non-performing loans and political influence to disperse loans to priority sector.

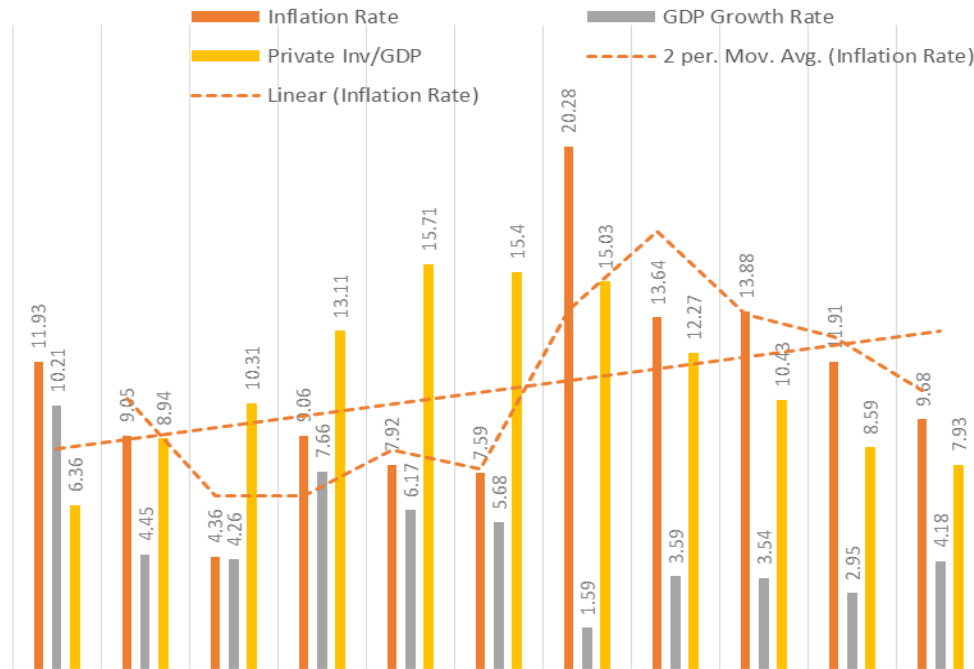
Against this background, apprehending the intrinsic weaknesses in financial sector, like other developing countries, Pakistan espoused Structural Adjustment Program (SAP) backed by International Monetary Fund (IMF) and World Bank (WB) as a policy prescription to mitigate the poverty. The financial reforms had been intended to instill competition, strengthening governance and maintaining the autonomy of central bank, instigating efficient monetary management coupled with determination of interest rate through market forces of demand and supply. These reforms took approximately two decades for implementation (Abbas *et al.*, 2013).

A number of studies conducted in this regard evaluated the effectiveness of financial sector reforms in Pakistan. Kulsoom and Shah (2017) conducted a post global crisis analysis for financial performance of Pakistani Banks after implementation of financial reforms and found that a poor financial performance in terms of profitability and advocated that regulations must be in favor of market and investors. Naseem *et al.* (2012) checked the link between macroeconomic indicators and bank specific characteristics and found that exogenous factors like inflation rate, stock market capitalization and real output growth are important factors. The impact of these reforms on major macroeconomic variables could be seen below in Figure 1. The continuous improvement in major macroeconomic variable can be observed here.

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<sup>2</sup> Data on Chinn-Ito index is found at <http://www.ssc.wisc.edu/~mchinn/research.html>

**Figure 1: Major Macroeconomic Indicators after Liberalization Reforms**



**Source:** Data taken from WDI

### 3. DATA AND VARIABLES

#### 3.1. Data Range and Sources

The study used annual time series data over 1995 to 2018. Data on financial openness (FOI) i.e. Chinn-Ito Index is collected from *Journal of Development Economics* (JDE), data on governance is taken from *World Governance Indicators* (WGI), and rest of other is retrieved from World Development Indicator (WDI) and handbook of statistics on Pakistan Economy issued by State Bank of Pakistan (SBP).

#### 3.2. Variables

The study is an indexed based analysis, where major variables are Financial Development (*FD*), Financial Openness (*FO*), Trade Openness (*TO*) and Institutional quality (*GOV*). The control variables include inflation rate (*INF*), real GDP per capita (*GDPPC*) and Secondary School Enrollment Rate (*SSE*). The construction of three indices is given below.

##### 3.1.2 Financial Openness Index (FOI)

We used Chinn-Ito<sup>3</sup> Index as an indicator of financial openness, the index ranges between two extreme values representing complete capital control at -2.66 and complete liberalization assuming 2.66. Chinn and Ito constructed this index using Principal Component Analysis (PCA) and utilizing the four convertibility restrictions stated in Exchange Arrangements and Agreements (ARAERS) by IMF. Chinn and Ito (2002), Chinn and Ito (2006), Arestis (2003) for empirical studies, use the index.

<sup>3</sup> Data on Chinn-Ito index is found at <http://www.ssc.wisc.edu/~mchinn/research.html>

### 3.1.3 Institutional Quality Index (IQI)

To measure institutional quality we used data on World Governance Indicator (*WGI*). The data consists of six dimensions of governance *i.e.* Voice and Accountability, Political Stability, Control on Corruption, Rule of Law, government effectiveness and regulatory quality. We constructed a unique index of institutional quality by aggregating these six dimensions of *WGI*.

### 3.1.4 Financial Development Index (FDI)

Financial development is measured by variety of proxies e.g. Liquid Liabilities (*LL*)<sup>4</sup> represent overall size of financial sector, M2 shows the degree of financial depth<sup>5</sup>, Credit to Private Sector (*CPS*)<sup>6</sup> shows quality and quantity of investment. Using all the indicators of financial depth in a single equation model may be responsible for incidence of multicollinearity, due to high correlation among the indicators. For this empirical analysis, we constructed a consolidated single index of financial development using Principal Component Analysis (*PCA*), which incorporates all above-mentioned indicators into a single index. *PCA* is a statistical technique, which can be used to generate a trivial number of uncorrelated variables using the number of correlated variables, known as Principal Components. However, it grips the variability in data (*Jalil et al.* 2010). The results of Principal Components are given below in Table 1.

### 3.1.5 Other Variables

The other variables include real GDP per capita, inflation rate (constructed by taking growth rate of *CPI*). Secondary School enrollment (*SSE*) and trade openness (constructed by dividing sum of imports and exports of goods and services with *GDP*).

## 3.3. Methodology

We used Auto Regressive Distributed Lag (*ARDL*) Model to estimate the short run and long run estimates of the study. The method proposed by Pesaran *et al.* (2001) is preferred over other traditional methods *i.e.* Engle and Granger (1987), Johansen (1988) and Gregory Hansen (1996) to find cointegration because (i). it produces better results regardless of sample size and produces best estimates even with finite sample ranging from 30 to 80 observations (*Ghatak & Siddiki, 2001*), (ii). It does not require any pre-condition regarding the order of integration of variables included in analysis, (iii). When lag selection is appropriate, *ARDL* corrects for problems of Endogeneity and serial correlation (*Pesaran et al., 2001*) and (iv). *ARDL* method simultaneously finds unbiased short run and long run estimates.

## 3.4. Estimable Model

A generalized *ARDL* model for three variables *x*, *y* and *z* can be written as:

$$\Delta y_t = \theta_1 + \phi_1 x_{t-1} + \phi_2 y_{t-1} + \phi_3 z_{t-1} + \alpha_1 \sum_{i=1}^n \Delta x_{t-i} + \alpha_2 \sum_{i=1}^n \Delta y_{t-i} + \alpha_3 \sum_{i=1}^n \Delta z_{t-i} + \mu_{t1}. \quad (1)$$

Where  $\alpha_1, \alpha_2$  and  $\alpha_3$  are short run while  $\phi_1, \phi_2$  and  $\phi_3$  are long run coefficients. The estimable form of model for current study is:

$$FDI = \pi_0 + \pi_1(FOI) + \pi_2(IQI) + \pi_3(TO) + \pi_4(EG) + \pi_5(INFR) + \pi_6(SSE) + \mu t \dots \dots (2)$$

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<sup>4</sup>(King & Levine, 1993)

<sup>5</sup>(Wood, 1993; Murinde & Eng, 1994a,b; Lyons & Murinde, 1994; Berthelemy & Varoudakis, 1995; Gregorio & Guidotti, 1995; Arestis & Demetriades, 1997; Sinha & Macri, 2001 and Odhiambo, 2009).  
*Levine et al., 2000; Levine, 2001; Gregorio & Guidotti, 1995; and Demetriades & Hossain 1996*



**Table 2: ADF Test Results**

Variables	Level First Difference	Integration order
FDI	-2.178* <b>-5.485</b>	I(0)
FOI	3.056 * <b>-4.453</b>	I(0)
IQI	-0.852 <b>-4.751*</b>	I(1)
TO	-0.920 <b>-6.325*</b>	I(1)
EG	-1.866 <b>-5.345*</b>	I(1)
INFR	-3.134* <b>-7.471</b>	I(0)

**Note:** \* represents significance at 5% level,  $H_0$ : Unit root exists in sample series, values in bold show first differenced value of ADF test

The step two involves, finding out whether there exists a long run relation between the variables included in our analysis. The results of Bounds test (cointegration test) are given below in Table 2, where the null hypothesis of no-cointegration is rejected at 1%. Having established the long run relationship, now we estimate short run and long run elasticities using ARDL method.

**Table 3: Bounds Test Analysis**

F-Stat	Probability	Decision
9.574	0.00023	$H_0$ Rejected

**Note:**  $H_0$ : No cointegration, unrestricted intercept, no trend and number of regressors  $k=5$

Short run and long run elasticities are given below in Table 3. We applied general to specific approach and omitted the variables, which show insignificant results.

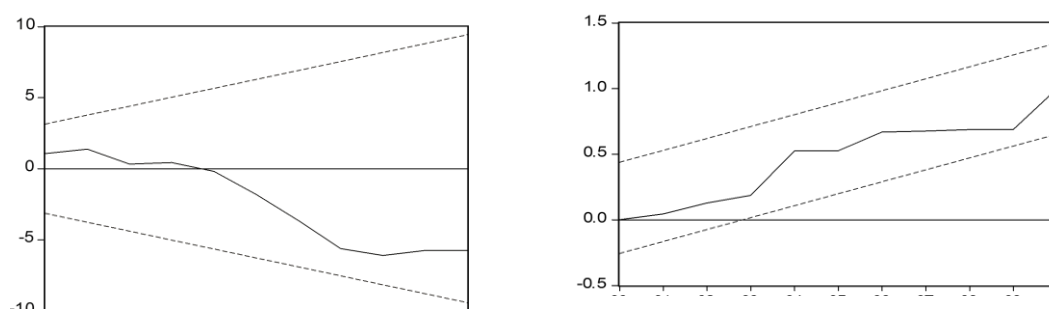
**Table 4: Short run and Long Run Estimates (Dependent Variable is FDI)**

Variable	Coefficient
C	-0.704(-1.613)
$\Delta$ (FOI)	0.094**(1.939)
$\Delta$ (IQI)	0.368* (2.876)
$\Delta$ (TO)	0.024**(1.977)
$\Delta$ (EG)	0.279*** (2.532)
(EC) <sub>t-1</sub>	-0.325***(-1.625)
FOI(-1)	-0.126***(-1.884)
IQI(-1)	0.016*** (1.664)
TO(-1)	0.010** (2.064)
EG(-1)	0.035*** (1.852)
SSE(1)	0.061** (1.956)
R-squared = 0.486	DW = 1.57

**Note:** Figure in parentheses show t-statistics. \*, \*\* and \*\*\* show significance at 1%, 5% and 10% level. Values on upper part and lower part of table show short run and long run elasticities respectively

The empirical findings presented here show that in short run financial openness index, institutional quality index, trade openness and real GDP per capita have positive and significant relationship with financial development index; however, the coefficient values of FOI and TO are very small.  $(EC)_{t-1}$  is error term and it is negative and significant, the coefficient value suggests that 32.5% of disequilibrium in short run is restored in long run. The long run elasticities has been shown in lower part of Table 4. It could be seen from the table that FOI, TO, SSE and EG has positive and significant impact on FD. However, FOI has a negative impact on FDI in long run. The negative impact of FOI in long run could be because of inappropriateness of financial sector reforms and policies. Bint-e- Ejaz and Ellahi (2012) and Khan and Quyyum (2007) have supported the findings. Financial reforms need an appropriate macroeconomic and institutional framework. Failing to provide this sound arrangement could cause ineffective reforms. We checked the stability of our coefficients using Cumulative Sum (CUSUM) and Cumulative Sum of Square (CUSMSQ) test. The graphs are reported below in Figure 01 and show that coefficients are stable over the period of study.

**Figure 1: CUSUM and CUSMSQ Test**



## 5. CONCLUSION

A wide variety of literature discussed the nature of relationship between financial openness and financial development from theoretical and empirical perspectives. This study conducted an index-based analysis to explore the impact of financial openness, trade openness institutional quality and economic growth on financial sector effectiveness in short run and long run. We constructed four hypothesis. In short run our four hypothesis have been confirmed. However, in long run positive relation between financial openness and financial sector development has not been confirmed (hypothesis 1). Our findings are important to discuss, as economic growth variable (GDPPC), Trade Openness (TO) and institutional quality affect positively. Secondary school enrollment (SSE) shows socioeconomic development and affects positively in long run. Trade openness is relevant in short run and long run because of its positive and robust impact. However, this impact is higher in short run while in long run its impact reduces. Our main findings are in line with the studies of Bint-e- Ejaz and Ellahi (2012); Rao and Kumar (2009); Ellahi & Ahmad (2011) and Khan & Hye (2011). Based on Major findings of this study the policy options include providing a sound institutional and macroeconomic framework to make financial reforms more effective in long run. Moreover, in the short run secondary school enrollment must be enhanced to contribute towards financial sector development. Future work is still required to find out the nature of unambiguous link between FOI and FDI in long run.

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