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Financial Liberalisation and Economic Growth: A Panel Investigation

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This study is aimed to examine the effect of Financial Liberalisation (FL) on economic growth. This study uses panel data of 58 countries, from 1973 to 2012, by applying the Panel Cointegration via Fully Modified Ordinary Least Square (FMOLS) method. This study constitutes FL index made up of eight dimensions of banking sector reforms. The estimation results found that Least Developed Countries (LDCs) showed more positively significant response to FL than Developed Countries (DCs). The reason is that most of the LDCs' financial systems constitutes dominant banking sector, whereas most of the DCs' financial systems are dominantly market based. Moreover, too much liberalisation shows ambiguous results in both groups of countries. The DCs are found to have significantly negative effect of too much FL, which infers that too much liberalisation harm the financial institutions and further the economic stability, via Currency over-valuation, capital flight, liquidity problems, financial distress, and eventually an occasional financial crisis. Whereas the LDCs' result shows a positive and significant effect of too much FL, which shows that they still have the capacity to absorb the beneficial effects of more financial reforms that are consequently beneficial for the financial intermediaries development and hence fosters the growth rate.

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1. INTRODUCTION

The phenomenon of financial liberalisation (*FL*) can be defined as the complete freedom of finance to move into and out of the country, the full convertibility of currency (monetisation), freeing of interest rate, relaxing credit allocation controls and reserve requirements, the removal of restrictions on the bank ownership, freedom of foreign ownership, and end to voting caps. The term financial liberalisation is an associate part of economic liberalisation, which refers to the deregulation of domestic financial markets

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and liberalisation of the capital accounts. One can also say that it refers to the notion that when a set of government regulations, laws, and other non-market restrictions are being relaxed.

The doctrine of liberalisation is linked with the classical liberalisation, which mainly concerns with securing the freedom of individuals by limiting the power of government. This philosophy emerged as a response to the Industrial Revolution and urbanisation in the 19th century in Europe and United States. It advocates civil liberties, with limited government intervention under the rule of law, property rights, and belief in laissez-faire economic policy.[1] And this idea has already been introduced by Adam Smith (1776), David Ricardo (1817), Thomas Malthus (1798), and Jean Baptiste Say (1855). In short, the term liberalisation reveals the removal of government controls to encourage private entities to spur up the economic growth.

From 1950s and onwards, conventional policy advice argued that, "government in developing countries should actively promote development through massive interventions in the financial sector". Those were highly influenced by the Keynesian school of thought, which supported the repression of the financial sector, especially through interest rate controls. Those repression policies were: fixing an interest rate ceiling, the imposition of high reserve requirements, quantitative restrictions on credit allocation, monopoly of bank ownership, policies on securities markets, banking regulations, restrictions on the capital account, and government interference in banks' lending decisions, which causes low saving rates, credit rationing, and low investments.

Financial liberalisation became the centre of discussion since last 30 years that pursued by the developed economies of the world. By the early 1970s, this policy of so-called financial repression came under severe criticism by many development economists. McKinnon (1973) and Shaw (1973) strongly argued in favor of liberalising the financial sector. Most of the liberalisation policies were undertaken since the end of 1980s and at the beginning of the 1990's. The main policy reforms that were taken into account are: removing interest rate controls, relaxing the credit controls, lowering reserve requirements, the reduction of government interference in banks' lending decisions, withdrawal of State ownership of domestic commercial banks, prudential regulations and the supervision of the banking sector, reducing the restrictions on the capital account, policies on securities markets, and free entry and exit of financial institutions to and from the banking sector.[2]

The development economists argues that by keeping in mind, it does not mean that economy must be Laissez-faire (i.e. no Govt. intervention in the economic affairs of the country) by removing all controls of the financial repressive policies. There is considerable body of literature evidences that a country may also be seen with occasional crisis despite of being removing the controls of financial repressive policies. This may be

[1]Modern Political Philosophy (1999), Richard Hudelson, M.O. Dickerson, *et al.* (2009) An Introduction to Government Policies: A Conceptual Approach. pp. 129.

Bronfen Brenner, Martin (1955) Two Concepts of Economic Freedom. *Ethics* 65:3, 157–170.

[2]The major components of the financial sector reforms related to the deregulation of the commercial bank's lending rates, lowering of their reserve requirements and the introduction of prudential regulations and standards broadly along with the lines recommended by the Basle Committee on Banking Supervisions. These policy dimensions of *FL* are also best defined by Abiad, *et al*. (2008) A New Database of Financial Reforms. (IMF Working Paper, 08/266).

due to the external shocks or other shocks such as: the sequence of *FL* policies to be implemented, unplanned liberalised economic policies, informal private sector activities, uncertain national security and political scenarios, or not well-functioning of financial markets [Edwards (1989); McKinnon (1991); Diaz-Alejandro (1985) and Davidson (1986)].

It is worth mentioning that such reforms are taken place due to the fact that to unveil the ground for the financial institutions and markets to enhance their competition; to strengthen their supervision and regulation; to enhance a market-based economy of monetary, exchange, and credit systems, in order to promote better resource allocation in the financial system.

The objective of this study is to examine the impact of financial liberalisation in the intermediaries sector on economic growth, by introducing newly constructed index of financial liberalisation. It is of immense interest to document the hypothesis of the research that what we are going to evident from this study. There are couple of hypothesises in this study, which involves: *FL* may lead to enhance the process of economic growth; there exists a long-run relationship between *FL* and economic growth; and too much *FL* beyond the threshold level may hurt the economy.

In light of the existing literature on examining the impact of financial liberalisation on economic growth, we are contributing the followings to the existing literature in the following ways: by introducing a newly constructed index of *FL* from Abiad, *et al.* (2008) in examining its impact on economic growth and examining a threshold level for too much *FL* that ambiguously affects the *DCs* and *LDCs*.

This study has some crucial significance and obviously something to have with policy-makers and advisors to overview on the role of financial institutions and bringing out some innovations and policy reforms in both real and financial sector of the economy, which further leads to step forward towards assessing the pace of economic growth. This study also helps the researchers and financial analysts to analyse different financial systems at a given time and over the time periods in introducing *FL* policies up to the level that is consequently beneficial for spurring the performance and efficiency of the financial institutions.

The study is designed as follows: Section 2 presents the literature review; Section 3 explores the theoretical framework of the links between financial liberalisation and economic growth; Section 4 deals with data and methodology; and Section 5 explores the estimation results and summarises the conclusion of the study.

2. LITERATURE REVIEW

Many studies have made considerable assistance to the literature and spurred much research about the finance-growth relationship. Among those the pioneering work in that literature was made by McKinnon (1973) and Shaw (1973), who emphasised that healthier running financial system, leads to more energetic economic growth. But there is a lot of aspects in the framework of country-specific studies, cross-country studies, geographical regions studies, income-groups studies, sequence of financial reform policies, and taken into account the proxies for the measurement of financial reforms.

The existing literature consists of both arguments i.e. in favour of and against the financial liberalisation. The authors that are in favour includes: Obstfeld (1998); Stultz

(1999); Levine (2001); Mishkin (2001); Galindo, *et al.* (2001). They argued that, *FL* improves the efficiency of the financial system and enhances the pooling of funds and risk diversification, use of funds to productive investment projects, reducing liquidity problems, promotes access to financial services, and so on.

On the other hand, some assessed that financial repression can be beneficial in respect of interest rate ceiling and directed credit controls that will promote the borrowers to borrow at a lower rate. Which leads to accelerate investment and further the economic growth. [Stiglitz (1994)]. It has been also observed that financial reforms are unlikely to fuel the economic growth without efficient and well-functioning financial institutions; instead the financial system ought to be properly fashioned before undertaking any liberalisation programme. The study of Laurenceson and Chai (1998) emphasised that *FL* is meaningful to takes place, by focusing the basic three financial reform policies i.e. Interest rate controls, intermediation controls, and credit controls. The revealed results were in accordance with the hypothesis of McKinnon (1973) and Shaw (1973), that *FL* fuels financial sector development and further economic growth.

The same method was applied by Khalaf and Sanhita (2009) by dividing study into two periods i.e. before liberalisation from 1970 to 2002 and after liberalisation from 2003 to 2007. But this study rejects the hypothesis of McKinnon (1973) and Shaw (1973) and documented that such results might be due to the uncertain political and security circumstances in the country. Their results were consistent with the empirical evidences of [Pill and Pradhan (1995); Fanelli and Medhora (1998) and Looney (2004)], which implies that the triumph of *FL* depends on the primary environment of an economy i.e. macro-economic constancy, quality of financial and legal institutions and the security state of affairs of a country.

Further work by Howard (2001) in combination with debt intermediation view revealed that *FL* leads to enhance domestic savings, whereby further spurs investment ratio, and hence economic growth. Those results were consistent with the McKinnon's hypothesis in the long run. The literature demonstrated that *FL* has a dual effect on economic growth. As the study of Ranciere, *et al.* (2006) examined that via direct impact (or the positive one) *FL* enhances Financial Development (*FD*) and henceforth the economic growth, and via indirect impact (or the negative one) *FL* leads to occasional financial crises. Their results revealed significant and positive relationship between *FL* and economic growth in the growth model. Whereas *FL* has a negative impact on economic growth in the crisis model, and the effect of growth is to some extent more distinct than crisis effects. And hence they rejected the lesson that *FL* is not good for economic growth.

As the empirical literature inferred that trade liberalisation is the primary step towards *FL* and further to influence the pace of economic growth. So, in that context Khan and Qayyum (2007) examined the impact of trade liberalisation and *FL* policies on the pace of economic growth of Pakistan, especially in the long-run. Their study demonstrated a positive and strong relationship between trade and *FL* on economic growth. This relationship can be explained via "incorporating the efficiency effect", the effect which essentially contributes to long-run growth.

3. THEORETICAL FRAMEWORK

Since, this study is concentrated merely to examine the impact of financial reforms in banking sector. So, this section presents a look on the theoretical links of financial liberalisation and economic growth.

3.1. Positive Relationship between Financial Liberalisation and Economic Growth

The basic idea of *FL* was primarily developed by the pioneers of liberalisation i.e. McKinnon (1973) and Shaw (1973) by developing the complementarity hypothesis. Which states that lifting of restrictions on interest rates due to *FL* leads to boost-up the saving level which henceforth increases the capital accumulation and growth rate, via proper rate of return. Their assumption was that, savings are reflected by interest rates and all the households are homogenous and have free access to capital markets. They further inferred that repressed financial institutions may restrain both saving and investment rate, due to the fact of lower return on their deposits (or in fact negative returns), which were lower than the prevailing inflation rate at a time. So, people prefer to keep their idle cash with themselves, instead of funnelling to financial intermediaries.

The theory demonstrates that this relationship of *FL* and economic growth can be explained via " incorporating the efficiency effect", the effect which essentially contributes to long-run growth. This efficiency effect is chiefly the response of fall in rent-seeking and the gains from the economies of scale (internal and external), due to *FL* policies [Bhagwati (1988); Lee (1993); Krueger (1998) and Fry (1995, 1997)]. The theory from the endogenous growth models predicts that economic growth may be flourished by the *FL* policies along with capital accumulation i.e. investment in both human and physical capital [Romer (1986); Lucas (1988); Rivera-Batiz and Romer (1991) and King and Levine (1993)].

Furthermore, it is referred that *FL* deepens the financial institutions, and financial deepening further funnels savings efficiently to fuel investment opportunities, improves corporate governance, decreases information acquisition and transaction costs, and encourage specialisation [Bencivenga and Smith (1991); De Gregorio and Guidotti (1995); Greenwood and Jovanovic (1990) and Levine (2004)].

McKinnon-Shaw (1973) Argument

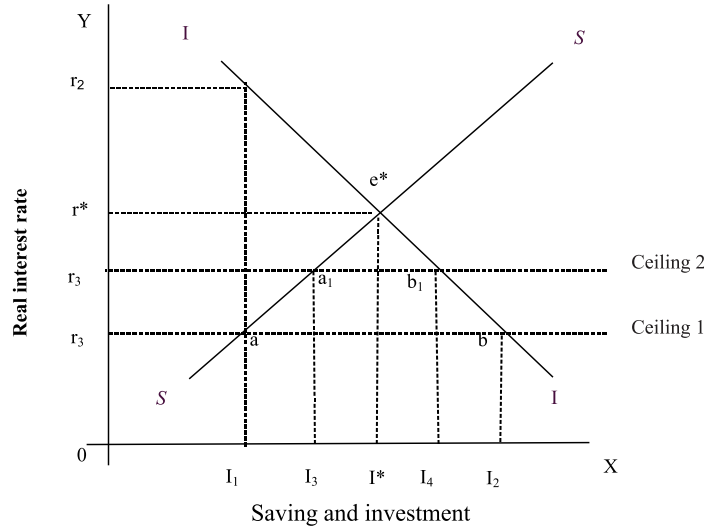
The argument against the repressive policies on the financial sector by the government side was severely criticised by McKinnon and Shaw independently in 1973, by stressing that those policies of restrictions dangerously deter the process of financial system and economic development. Their views are highly influential on IMF, World Bank, and countries policy making regarding financial sector. Their arguments are:
McKinnon (1973) Argument about *FL* is:

> *"Money holdings and capital accumulation are complementary in the development process. Because of the lumpiness of investment expenditure and the reliance on self-financing, agents need to accumulate money balances before investment takes place. Positive (and high) real interest rates are necessary to encourage agents to accumulate money balances, and investment will take place as long as the real rate of return on investment exceeds the real rate of interest."*

Shaw (1973) Argument about *FL* is:

"On the other hand, Shaw stresses the importance of FL for financial deepening, and the beneficial effect of high interest rates on encouragement to save and discouragement to invest in low-yielding projects. The increased liabilities of the banking system, resulting from higher real interest rates, enable the banking system to lend more resources for productive investment in a more efficient way."

Fig. 1. McKinnon-Shaw Argument Diagram



This diagram is an illustration of McKinnon (1973) and Shaw (1973) argument about *FL*, which shows a positive relationship between real interest rate and saving and a negative relationship between real interest rate and investment. The market clearing point is at e^*, where equilibrium real interest rate and investment/saving level is r^* and I^*, respectively, where there is no restrictions by the government. Now there are some scenarios to be presented by altering the level of real interest rate and its impact on saving and investment level. Scenario I, if government imposes restrictions on deposit interest rate, let at r_1. This would leads to a decline in the saving rate because of being rewarding with a low rate of return, and it will ultimately impedes the investment level at I_1 (because the classical assumption postulates that there should be some prior saving for having investment).

Now Scenario II, if there are no restrictions on lending interest rates, then the banks are freely charge an extra interest rate for lending let at r_2. So, this will result in a decline of investment level at I_1. The gap between r_1 and r_2 would be a profit for the banks. Scenario III, if the restrictions are imposed on both deposit and lending interest rate, then the demand for investment would increase to I_2 but letting saving unchanged at I_1. This causes a problem of credit rationing, by not satisfying the too high investor's demand for loans but less availability of saving resources. Scenario IV, if both the interest rate (deposit and lending rates) are restricted but above the previous level, then it would raise both saving and investment level at I_3 at real interest rate of r_3. This also leads to a reduction in credit rationing. And Scenario V, if the real interest rate is fully

liberalised and leave it to the market forces to determine the equilibrium real interest rate i.e. r^* by achieving the saving and investment level of I^*.

3.2. Negative Relationship between Financial Liberalisation and Growth

On the other hand, Campbell and Mankiw (1990) challenged the idea of McKinnon-Shaw and specially their basic assumptions. They argued that neither all households are homogenous nor all they have free access to credit markets. Because some households have liquidity constraints and they cannot smooth their consumption inter-temporarily, so their decisions are entirely based on the current income. So, when the liquidity constraints assumption is being relaxed, it will leads to a boom in the consumption and hence a fall in savings follows investment and growth impediment. So, there are two types of households: liquidity constraints households whose entire consumption depends upon current income and who cannot smooth their consumption inter-temporarily, and the other one is the households who have free access to capital markets and who can smooth their consumption inter-temporarily. The same idea was given by Ostry and Reinhart (1992) by assuming the role of subsistence consumption in relation with interest rate.

The repressionists are highly influenced by Keynesian ideas, which supported the repression of the financial sector, especially through interest rate controls. Financial repression policies may cause incentives for a decline in saving rates, credit rationing, and low investment that is in contrast with theory which states that, an economy with effective financial system can achieve growth and development via efficient capital allocation. In addition, it is worth noting that these repressive policies deter the provision of services by the financial institutions i.e. evaluation, pooling of funds, saving mobilisation, risk diversification, resource allocation, and valuing the rewards, thereby reduces the innovation and efficiency in the way of accelerating economic growth [King and Levine (1993)].

4. DATA AND METHODOLOGY

This section will lead to step forward in solving the research hypothesis and the existing problems in the way of determining the relationship between financial liberalisation policies and economic growth.

4.1. Methodology

This research explore the existing problem through illustrating various regression models and data tests that is aimed to assess that how *FL* policies affects the pace of economic growth accompanied with other growth determinants in the panel study.

4.1.1. *Model Specification*

This study employ real GDP per capita growth rate (proxy for economic growth rate) as dependent variable and regress it on *FL* indicator accompanied with other control variables. The general model specification form is as:

$$Y_{i,t} = \beta_o + \beta_1{}^{r}\Sigma\, X_{i,t} + \beta_2\, Lib_{\,i,t} + \varepsilon_{\,i,t}$$

Where $Y_{i,t}$ shows the real GDP per capita growth rate. $\Sigma X_{i,t}$ is a vector that indicates the summation of controlled variables, which shows other determinants of the growth rate, which include: inflation rate (*inf*), secondary school enrolment (*SSE*), population growth rate (*pop*), real interest rate (*RIR*), log of life expectancy (*life*), and trade openness (*trade*), and β_1^r is the coefficient parameter for those control variables. Whereas $Lib_{i,t}$ shows the *FL* index, which is the aggregate measure of eight dimensions of financial reforms in the banking sector i.e. directed credit and high reserve requirements, aggregate credit ceilings, credit controls,[3] interest rate controls, state ownership, banking regulations, restrictions on the capital account, and entry barriers into the domestic financial intermediaries sector. The value of a dimension ranges from 0 to 3, which indicates full repression and full liberalisation, respectively, and it is further normalised between 0 and 1 for the whole index value.

4.1.2. *Data Tests and Estimation Technique*

This study uses the method of Fully Modified Ordinary Least Square (FMOLS) also suggested by Pedroni (2000), which is a technique that accounts for endogeneity, heterogeneity and autocorrelation among the individuals caused by individual effects, and also where there exists a long-run relationship between the main variables i.e. *FL* and economic growth. This method is advantageous in a sense that it allows researchers to selectively pool long run information and short run dynamics along with fixed effects to be heterogeneous among different members of the panel. In addition, it produces asymptotically unbiased estimators and irritant parameter free standard normal distribution [Pedroni (1999)].

4.2. Data Sample and Sources

The data sample consists of 58 countries across the World (i.e. 27 *DCs* and 31 *LDCs*),[4] while the sample period is taken from 1973 to 2012. The notion behind choosing the origin of sample period from 1973 is due to the fact that the process of liberalisation is emerged from the mid of 1970's in most of the developed countries. The data are taken from World Bank's World Development Indicators (WDI), Global Development Network Growth Database, and from the studies of [Caprio and Klingebiel (2003); Abiad, Detragiache, and Tressel (2008); Laeven and Valencia (2012) and Čihák, *et al.* (2013)].

This study involves the test for stationarity is to be checked by applying Panel Unit root test of Im, Pesaran, and Shin (1997), for the variable that is whether they are stationary at level, first difference, or lag of the difference. And involving to run a test of Panel Cointegration by Pedroni (1997, 1999), to check out the cointegrating vectors in the panel.

5. ESTIMATION RESULTS AND DISCUSSION

Before delving into presenting the estimation results of Panel Cointegration, study needs to indicate the tests statistics of stationarity tests and Cointegration tests (to check out whether the variables are integrated of the same order or not), then the regression results.

[3] Credit Controls is defined as = 0.75*Directed Credit + 0.75*Credit Ceilings, when Credit Ceilings is available. If not then Directed Credit will be considered as Credit Controls.

[4] World Bank, 2011, using 2011 GNP per capita in US dollars i.e. low Income countries = $1025 or less, Lower Middle Income countries = $1026 to $4035, Upper Middle Income countries = $4036 to $12475, and High Income countries = $12476 or more.

5.1. Data Test Results

The test results of Im, Pesaran, and Shin (1997) states that all the variables are stationary at their first difference. So, the null hypothesis of no stationarity is rejected at 1 percent significance level and accepted the alternative hypothesis. The test statistics of Panel Unit root tests are presented in Tables 2A and 2B (in Appendix) for both *DCs* and *LDCs*, respectively. Whereas the test results of Pedroni (1997, 1999) postulates appropriate test statistics of the given seven statistics. Most of the test statistics of states that the null hypothesis of no cointegration is rejected which is given by the p-value i.e. less than 0.05 for most of the test statistics out of seven test statistics are given in Tables 3A and 3B (in Appendix). Hence, it is concluded that the model has cointegration which means the variables in the models are cointegrated of the same order [Asteriou and Hall (2011)].

5.2. Estimation Results of Regression Models

By examining the impact of *FL* on economic growth, the result states that *FL* significantly affects the economic growth with positive sign, for both group of countries, which endorses the view of McKinnon (1973) and Shaw (1973) (Table 1). These results are also consistent with Levine (2001). (See also Appendix Tables 4A and 4B).

Table 1

The Effect of Financial Liberalisation on Economic Growth

Variables	*DCs*	*LDCs*	*DCs*	*LDCs*
RIR	–0.134*	–0.028	–0.053	–0.044**
Inf	3.037*	–0.286	–0.746	–0.811*
Pop	–1.307*	–0.798***	–2.395*	4.733*
Life	33.446	35.284*	90.321***	47.382**
Trade	17.696*	1.204	17.448*	29.243*
Lib	9.757*	2.012*	2.147	8.535*
Inv.	1.917*		5.80*	
FDI	2.499*		4.426*	
Govt.	–5.850		–35.002*	
Banking	–0.909**		–0.795	
Currency	–5.526*		–10.091*	
Debt	–1.475		–3.069*	
Lib2	–7.069*		11.085*	
R2	0.361	0.287	0.684	0.746

Source: Author's calculations.

Note: • Fully Modified Ordinary Least Square (FMOLS) estimation technique.

• Dependent variable is real GDP per capita growth rate ($Y_{i,t}$)

• *RIR* in the real interest rate, *Inf* is the Inflation rate, *Pop* is the Population growth rate, *Life* is the log of life expectancy at birth, *Trade* is the trade openness (exports + imports / GDP), *Lib* is the *FL* index constructed from eight dimensions of reforms (i.e. directed credit and high reserve requirements, credit ceilings, credit controls, interest rate controls, entry barriers, banking supervision, privatisation, and capital account controls), *Inv.* is the domestic investment to GDP ratio, *FDI* is the foreign direct investment inflows, *Govt.* is the Government expenditures to GDP ratio, Lib^2 refers to too much *FL* in the banking sector (to check a threshold level), *Banking, Currency* and *Debt* is the dummy variables of Banking crisis, Currency crisis, and Debt crisis, respectively.

• DC and LDC stands for Developed Countries and Least Developing Countries, respectively.

• Statistical significance at 1 percent, 5 percent and 10 percent is denoted by*, ** and *** respectively.

5.2.1. *Domestic Investment Effect*

To examine the investment efficiency effect on economic growth along with *FL*, study have included the variable of share of domestic investment to GDP and its interaction term with *FL* index in the general model specification. The result shows a positive and significant signs of domestic investment ratio. And it gives a significant positive sign when domestic investment and *FL* jointly affects the economic growth rate (see also Appendix Tables 4A and 4B).

5.2.2. *Foreign Cash Flow Effect*

To examine the foreign cash inflows into the economy, this study employ variables of foreign direct investment to GDP and its interaction term with *FL* index in the main model specification by replacing domestic investment variable, both gives a positive and significant sign with economic growth. It means that foreign direct investment has a positive impact to accelerate the process of economic growth in both *DCs* and *LDCs*. And it generates more opportunities in real sector and financial sector as well, by generating more employment opportunities, new production techniques, economies of scale, improving living standards, and per capita incomes of the population. But here the *FL* index gives an insignificant positive sign with economic growth, in case of *DCs*. This can be due to the fact that such financial reforms are for the banking sector, but most of the *DCs* are dominantly Securities Market-Based. So, that's why such reforms insignificantly affect the growth process (see Appendix Tables 4A and 4B).

5.2.3. *Government Expenditures Effect*

By assessing the effect of government expenditures on economic growth, we employed share of Government expenditures to GDP variable and its interaction term with *FL* index in the main model. The result shows that the government expenditures affects negatively significant the economic growth. This may be due to high government spending which cancels out the beneficial effect of financial reforms in banking sector. Moreover, since increasing real interest rate is aimed to attract the savings or spare cash from the informal sector to formal sector, meanwhile if these formal sector banks are subject to required reserve requirements by the government, then the informal sector money will be shifted to the government sector investment projects rather than lending to private sector investments. Then the government uses the reserve requirements of banks for productive purposes of high yielding investments. So, this will leads to more capital accumulation and would accelerate the process of growth, but if the reserve requirements restrictions are relaxed then it would deter the economic growth, as the Neo-Structuralist School addressed [Buffie (1984)].

5.2.5. *Financial Crises Effect*

This study has also assessed the impact of occurrence of any financial crisis. So, for this purpose the study have employed dummy variables of Banking crisis, Currency crisis, and Debt crisis in the general specification model. The result shows appropriate negative signs with economic growth that infers a deteriorating effect on economic growth rate for both groups of countries (see Appendix Tables 4A and 4B).

5.2.6. *Effect of Too Much Financial Liberalisation*

The thing which is worth mentioning that what would be the effect on economic growth if there is too much *FL* in the banking sector? So, if to have square of the *FL* index in order to assess the effect of too much *FL* or a threshold level of *FL*, leads to get a significantly negative sign of square of liberalisation index, for *DCs* (Table 5.1).[5] These results are also consistent with Ranciere, *et al.* (2006). Which means that there should be a specified level of steps or sequencing of *FL* to be taken, but too high liberalisation may harm the economic growth process. This research can amplify this phenomenon of too high *FL* from the view of Post-Keynesians that *FL* may involve in liberalising interest rates which ultimately harms the macroeconomic stability, causing currency over-valuation [Davidson (1986); Dutt (1990-1)].

As the comment of Diaz-Alejandro (1985) endorsed the fact of too much *FL* in his paper that "Goodbye Financial Repression, Hello Financial Crash". But one can also see the difference between the *DCs* and *LDCs* i.e. in *DCs* too much *FL* leads to deter the economic growth whereas in *LDCs* it positively and significantly affects the economic growth. It may be due to the fact that the *DCs*' financial institutions are already liberalised but further too much liberalisation may de-accelerate their effect on the growth process. While on contrary in *LDCs*, they are in a process of *FL* and there exists the capacity to liberalise their financial institutions and markets furthermore, as one can see from the results that it gives significant and positive sign in case of taking squared term of *FL* index in case of *LDCs* (see Table 5.1).

The reason for positive and significant sign can be due to the fact that the *LDCs* are far away from that threshold level that deteriorates the process of economic growth and they still have a capacity to absorb the reforms in financial sector as they are being in the process of *FL*, and also their financial institutions are not so much developed that can leads to worse if bringing more reforms in the banking sector. Moreover, they had been the victim of so much financial repressive policies for a long time, so when the *FL* emerged in 1990's, the *LDCs* are very cautiously dealing with *FL* policies.

Another aspect of having difference in their consequences of *FL* in *DCs* and *LDCs* is that, the *DCs* are mainly Market-Based (dominantly Securities Market-Based), so their intermediaries sector insignificantly affects their growth process. While the *LDCs* are mostly Intermediaries-Based (or dominantly Bank-Based), so their economic systems are more responding to their banking sector reforms. Furthermore, *LDCs* are on their way of *FL* and they have the capacity to absorb the pros-and-cons of *FL*.

6. CONCLUSIONS

It is evident from the results that the consequences of Financial Liberalisation (*FL*) vary across the countries. The empirical results evident that Least Developed Countries

[5]Here by "Too much Liberalisation" means a threshold level at which the *FL* may be beneficial but as when you liberalise more it will leads to affect dangerously. Its square infers a quadratic equation, in which it initially increases and gives a positive sign but after an optimal point (at maximum or threshold level) it follows to decline by making a parabola. One can find out the threshold level as: Let's have the equation as: $Y = \beta_0 Lib + \beta_1 Lib^2 + \varepsilon$. By taking derivative of the equation w.r.to *Lib*, we have, $dY = \beta_0 + 2\beta_1 Lib$. Let $\beta_0 = 9.75$, and $\beta_1 = 0.75$ (i.e. the average value of the *FL* index). Putting them in the derivative equation then by taking an anti-log of this value, leads to get a turning value of the threshold level, but there is not any single threshold value for the whole groups of countries. Rather every country would have its own threshold value through above process.

(*LDCs*) responded positively more significant to *FL* (regressing individually and jointly) than Developed Countries (*DCs*) because the financial reforms were for the banking sector, while the *DCs* are dominantly securities market-based rather than bank-based. Moreover, to examine the effect of too much liberalisation in the financial institutions, it shows ambiguous signs for *DCs* and *LDCs*. The *DCs* are found to have negatively significant response to too much liberalisation that can harm their financial systems and further the economic stability via: Currency over-valuation, capital flight, liquidity problems, financial distress, and eventually an occasional financial crisis[6]. Whereas on the other hand, *LDCs* result shows a positive but insignificant response to too much liberalisation. It means that the *LDCs* are very cautiously and carefully with proper sequence exercising the introduction of financial reforms in the financial institutions. Because they had been the victim of severe financial repression for a long time and now there is still the capacity to absorb the beneficial consequences of introducing more financial reforms that are consequently beneficial for the financial institutions development and hence the economic growth rate.

6.1. Policy Implications

This study suggests some of crucial policy implications on the role of financial institutions reforms that are expected to exert a significant impact on financial development and further on the pace of economic growth, if these policies are to be implemented properly, cautiously, and with proper sequence. The findings of this research suggest some policies which include:

(1) A threshold limit for introducing *FL* in the financial institutions in order to prevent from harm effects of too much *FL* (such as: financial distress, capital flight, liquidity problems, financial crash, currency over-valuation, decline in balance of payments, and macroeconomic volatility).
(2) A proper sequence of liberalisation policies and to ensure internal *FL* first in order to avoid the capital flight out of the economy that results in liquidity problems.
(3) To realise that real sector reforms are the pre-requisite for bringing out financial reforms [as Arestis (2005)].
(4) Moreover, to nut-sum there should be adequate banking supervision over the intermediation of funds, introducing reform policies, and credit allocation that are to be allocated to productive investments and ensuring that the bank had a well-diversified loan portfolio.

[6] Diaz-Alejandro (1985); Dutt (1990-1) and Davidson (1986).

APPENDIX

Table 2A

Im, Pesaran, and Shin (1997) Panel Unit Root Tests.
(27 Developed Countries)

Sample: 1973 2012
User-Specified lag length: 1

Null Hypothesis: There is Unit Root (No Stationarity)
Alternative Hypothesis: There is no Unit Root (Stationarity)

Variable	Statistic	Prob.
Banking	–11.9199	0.0000
Currency	–16.7627	0.0000
FDI	–33.9901	0.0000
Govt.	–21.5911	0.0000
Y	–31.5280	0.0000
Inf	–6.59208	0.0000
Inv.	–27.2098	0.0000
Lib	–21.4225	0.0000
Life	–32.7568	0.0000
Pop	–21.9070	0.0000
RIR	–30.3088	0.0000
SSE	–20.3543	0.0000
Trade	–25.4879	0.0000

Source: Author's calculations.

Table 2B

Im, Pesaran, and Shin (1997) Panel Unit Root Tests
(31 Developing Countries)

Sample: 1973 2012
User-Specified lag length: 1

Null Hypothesis: There is Unit Root (No Stationarity)
Alternative Hypothesis: There is no Unit Root (Stationarity)

Variable	Statistic	Prob.
Banking	–15.5685	0.0000
Currency	–11.7190	0.0000
FDI	–33.6364	0.0000
Govt.	–28.2424	0.0000
Y	–39.7123	0.0000
Inf	–14.4163	0.0000
Inv.	–35.8628	0.0000
Lib	–23.6423	0.0000
Life	–4.04862	0.0000
Pop	–9.23052	0.0000
RIR	–32.9830	0.0000
SSE	–17.8760	0.0000
Trade	–30.7171	0.0000

Source: Author's calculations.

Table 3A

Pedroni (1997, 1999) Panel Cointegration Tests
(27 Developed countries)

Null Hypothesis: No Cointegration
User-specification lag length: 1

Alternative Hypothesis: Common AR coefficients (within-dimension)				
			Weighted	
	Statistic	Prob.	Statistic	Prob.
Panel v-statistic	0.742735	0.2288	–1.937914	0.9737
Panel rho-statistic	–0.925184	0.1774	0.751099	0.7737
Panel pp-statistic	–13.75924	0.0000	–12.96063	0.0000
Panel ADF-statistic	–8.9908 0	0.0000	–9.196837	0.0000
Alternative hypothesis: Individual AR coefficients (between-dimension)				
	Statistic	Prob.		
Group rho-statistic	2.149619	0.9842		
Group pp-statistic	–17.37483	0.0000		
Group ADF-statistic	–8.825183	0.0000		

Source: Author's calculations.

Table 3B

Pedroni (1997, 1999) Panel Cointegration Tests
(31 Developing countries)

Null Hypothesis: No Cointegration
User-specification lag length: 1

Alternative Hypothesis: Common AR coefficients (within-dimension)				
			Weighted	
	Statistic	Prob.	Statistic	Prob.
Panel v-statistic	–1.971493	0.9757	–4.967897	1.0000
Panel rho-statistic	–3.759050	0.0001	–0.927199	0.1769
Panel pp-statistic	–21.23978	0.0000	–20.76501	0.0000
Panel ADF-statistic	–10.76474	0.0000	–11.06558	0.0000
Alternative hypothesis: Individual AR coefficients (between-dimension)				
	Statistic	Prob.		
Group rho-statistic	0.639455	0.7387		
Group pp-statistic	–29.78628	0.0000		
Group ADF-statistic	–10.59299	0.0000		

Source: Author's calculations

Table 4A

Table 4A

The Effect of Financial Liberalisation on Economic Growth

(27 Developed Countries)

	Estimated Regressions							
Variables	1	2	3	4	5	6	7	8
RIR	–0.098*	–0.106*	–0.114*	–0.121*	–0.095*	0.0038	–0.022	–0.048**
Inf	4.055*	4.171*	3.647*	3.301*	4.350*	3.023*	2.779*	2.648**
Pop	–1.186*	–1.227*	–1.289*	–1.378*	–1.222*	–1.406*	–1.155*	–1.858*
Life	71.812**	68.034**	42.792	43.492	41.317	27.795	15.207	27.934
SSE	5.089*	5.477*	5.771*	3.534	3.776	3.943	2.515	5.561*
Trade	16.443*	16.632*	17.343*	14.682*	13.877*	16.968*	16.991*	16.388*
Lib	0.116*	0.179	0.029	0.863	0.338	1.257	21.829*	1.837**
Inv.		0.252						0.771*
Lib*Inv.			0.485***					0.338***
FDI				0.549*				–18.059*
Lib*FDI					0.597*			
Govt.						–21.940*		
Lib*Govt.							17.116*	
R^2	0.345	0.345	0.351	0.359	0.348	0.387	0.396	0.401

Source: Author's calculations

Note:

- Fully Modified Ordinary Least Square (FMOLS) estimation technique.
- Dependent variable is real GDP per capita growth rate ($Y_{i,t}$)
- *RIR* in the real interest rate, *Inf* is the Inflation rate, *Pop* is the Population growth rate, *Life* is the log of life expectancy at birth, *SSE* is the secondary school enrolment ratio, *Trade* is the trade openness (exports + imports / GDP), *Lib* is the *FL* index constructed from eight dimensions of reforms (i.e. directed controls and high reserve requirements, aggregate credit ceilings, credit controls, interest rate controls, entry barriers, banking supervision, privatisation, and capital account controls), *Inv.* is the domestic investment to GDP, *Govt.* is the Government expenditures to GDP, *FDI* is the foreign direct investment inflows, *Banking, Currency* and *Debt* is the dummy variables of Banking crisis, Currency crisis, and Debt crisis, respectively.
- Statistical significance at 1 percent, 5 percent and 10 percent is denoted by*, ** and *** respectively.

Table 4B

The Effect of Financial Liberalisation on Economic Growth

(31 Developing Countries)

	Estimated Regressions								
Variables	1	2	3	4	5	6	7	8	9
RIR	–0.037*	–0.028**	–0.032*	–0.052*	–0.059*	–0.035*	–0.039*	–0.054*	–0.055*
Inf	–0.724**	0.466	–0.618**	–0.331	–0.275	–0.736**	–0.647***	–0.038	–0.132
Life	24.178*	18.39***	21.769**	21.646**	22.016**	24.547*	24.832*	0.771**	25.650**
Pop	0.516	–0.492	–0.432	–0.016	–0.526	–0.372	–0.511	6.709	–0.274
Trade	0.585	0.681	0.983	0.932	0.847	3.552**	0.643	1.622	5.447*
Lib	9.711*	9.626*	8.888*	6.449*	6.844*	9.785*	7.466**	7.122*	7.406**
Inv.		2.083*						2.504*	3.469
Lib*inv.			0.728						
FDI				1.207*				1.455*	0.591
Lib*FDI					2.743*				2.878*
Govt.						–2.285		–2.424***	–2.129
Lib*Govt.							2.085		
Banking									–0.795
Currency									–4.288*
R^2	0.280	0.283	0.281	0.332	0.335	0.283	0.280	0.339	0.572

Source: Author's calculations

Note:

• Fully Modified Ordinary Least Square (FMOLS) estimation technique.

• Dependent variable is real GDP per capita growth rate $(Y_{i,t})$.

• *RIR* in the real interest rate, *Inf* is the Inflation rate, *Pop* is the Population growth rate, *Life* is the log of life expectancy at birth, *Trade* is the trade openness (exports + imports / GDP), *Lib* is the *FL* index constructed from eight dimensions of reforms, *Inv.* is the domestic investment to GDP, *Govt.* is the Government expenditures to GDP, *FDI* is the foreign direct investment inflows, *Banking* and *Currency* is the dummy variables of Banking crisis and Currency crisis, respectively..

• Statistical significance at 1 percent, 5 percent and 10 percent is denoted by*, ** and *** respectively.

Table 4B

REFERENCES

Abiad, Abdul and Ashoka Mody (2005) Financial Reforms: What Shakes it? What Shapes it? *The American Economic Review* 95:1, 66–88.

Abiad, Abdul, Enrica, Detragiache, and Thierry Tressel (2008) A New Database of Financial Reforms. (IMF Working Paper, Wp/08/266).

African Development Report (1994) Financial Structure, Reforms and Economic Development in Africa. Abidjan: African Development Bank.

Arestis, Philip (2005) Financial Liberalisation and the Relationship between Finance and Growth. (CEPP Working Paper, No. 05/05, pp. 1–23).

Asteriou, Dimitrios, and Stephen G. Hall (2011) *Applied Econometrics.* Second Edition.

Bencivenga, V. R. and B. Smith (1991) Financial Intermediation and Endogenous Growth. *The Review of Economic Studies* 58, 195–209.

Bhagwati, J. (1988) Export-Promoting Trade Strategy: Issues and Evidence. *The World Bank Research Observer* 27–57.

Bronfen Brenner, Martin (1955) Two Concepts of Economic Freedom. *Ethics* 65**:**3, 157–170.

Buffie, E. F. (1984) Financial Repression: The New Structuralists and Stabilisation Policy in Semi-Industrialised Economies. *Journal of Development Economics*, April.

Campbell, John and Gregory N. Mankiw (1990) Permanent Income, Current Income, and Consumption. *Journal of Business and Economic Statistics* 8:3, 265–79.

Caprio, G. and D. Klingebiel (2003) Episodes of Systemic and Borderline Banking Crises. The World Bank. (Mimeo).

Čihák, Martin., Asli Demirguc-Kunt, Erik Feyen, and Ross Levine (2013) Financial Development in 205 Economies, 1960 to 2010. *Journal of Financial Perspectives, EY Global FS Institute* 1: 2, 17–36.

Davidson, Paul (1986) Finance, Funding, Saving and Investment. *Journal of Post Keynesian Economics* (Fall).

De Gregorio, J. and P. Guidotti (1992) Notes on Financial Markets and Economic Growth. The World Bank. (Mimeo).

Diaz-Alejandro, C. (1985) Good-bye Financial Repression, Hello Financial Crash. *Journal of Development Economics* 19, 1–24.

Dutt, A. (1990-1) Interest Rate Policy in LDC: A Post-Keynesian View. *Journal of Post Keynesian Economics* (Winter).

Edwards, S. (1989) *Real Exchange Rates, Devaluation and Adjustment: Exchange Rate Policy in Developing Countries.* Cambridge, Mass.: MIT Press.

Fanelli, Jose Maria, and Rohinton Medhora (eds). (1998) Financial Reforms in Developing Countries. Houndmills, UK: IDRC Books and Macmillan Press Ltd. Contains Reforms Information Regarding Argentina, India, Nigeria, Turkey, Uruguay, Canada, Mexico, Indonesia, and Malaysia.

Fowowe, Babajide (2011) Financial liberalisation Policies and Economic Growth: Panel Evidence from Sub-Saharan Africa. University of Ibadan, pp. 1–23.

Fry, Maxwell J. (1995) *Money, Interest, and Banking in Economic Development*. Baltimore: John Hopkins University Press.

Fry, Maxwell. J. (1997) In Favour of Financial Liberalisation. *The Economic Journal* 107, 754–770.

Galindo, Arturo, Alejandro Micco, and César Serra (2003) Better the Devil That You Know: Evidence on Entry Costs Faced by Foreign Banks. Inter-American Development Bank, (Working Paper, No. 477).

Greenwood, J. and B. Jovanovic (1990) Financial Development, Growth, and the Distribution of Income. *Journal of Political Economy* 98, 1076–1107.

Howard, Michael. (2001) Financial Liberalisation in Jamaica. *Savings and Development* 25:4, 457–473.

Im, K. S., M. H. Pesaran, and Y. Shin (1997) Testing for Unit Root in Heterogeneous Panels. MS, Department of Applied Economics, University of Cambridge.

Khalaf, Amar Hamad, and Athawale Sanhita (2009) Financial Liberalisation and Financial Development in Iraq. *Savings and Development* 33: 4, 377–404.

Khan, M. A. and A. Qayyum (2007) Trade Liberalisation, Financial Development and Economic Growth. (PIDE Working Papers 19).

King, Robert G. and Robert Levine (1993) Finance and Growth. *Journal of Economics* 108, 717–737.

King, Robert G. and Robert Levine (1993) Finance and Growth: Schumpeter Might be Right. *The Quarterly Journal of Economics* 108:3, 717–737.

Krueger, Anne O. (1997) Trade Policy and Economic Development: How we Learn. *American Economic Review* 87:1, 1–22.

Laeven Luc, and Valencia Fabian (2012) Systemic Banking Crises Database: An Update. (IMF Working Papers, Wp/12/163).

Laurenceson, James and J. C. H. Chai (1998) Financial Liberalisation and Financial Depth in China. *Savings and Development* 22:4, 393–413.

Lee, J. W. (1993) International Trade, Distortions, and Long-Run Economic Growth. *IMF Staff Papers* 40, 299–328.

Levine, Ross (2001) International Financial Liberalisation and Economic Growth. *Review of International Economics* 9: 4, 688–702.

Levine, Ross (2004) Finance and Growth. Theory and Evidence. Chapter 12. Department of Economics, Brown University and the NBER 64, Waterman Street, Providence, RI 02912, USA.

Looney, R. (2004) Banking on Baghdad: Financial Change in Post-war Iraq. *Centre for Contemporary Conflict, Strategic Insights* 3: 5.

Lucas, Robert. Jr. (1988) On the Mechanism of Economic Development. *Journal of Monetary Economics* 22:1, 3–42.

Malthus, Thomas R. (1798) An Essay on the Principle of Population. *Oxford World's Classics Reprint.*

McKinnon, Ronald I. (1973) *Money and Capital in Economic Development*. Washington, DC: Brookings Institution.

McKinnon, Ronald I. (1991) *The Order of Economic Liberalisation: Financial Control in the Transition to a Market Economy*. Baltimore: Johns Hopkins University Press.

Mishkin, Frederic S. (2001) The Transmission Mechanism and the Role of Asset Prices in Monetary Policy. National Bureau of Economic Research (NBER). Massachusetts Avenue Cambridge, MA. (Working Paper No. 8617, 1050).

Obstfeld, Maurice (1994) Risk Taking, Global Diversification and Growth. *American Economic Review*.

Ostry, Jonathan D. and Charmen M. Reinhart (1992) Private Saving and Terms of Trade Shocks: Evidence from Developing Countries. *IMF Economic Review* 39:3, 495–517.

Pedroni, Peter (1997) Panel Cointegration: Asymptotic and Finite Sample Properties of Pooled Time Series with an Application to the PPP Hypothesis: New Results. Indiana University. Working Paper).

Pedroni, Peter (1999) Critical Values for Cointegration Tests in Heterogeneous Panels with Multiple Regressors. *Oxford Bulleting of Economics and Statistics* 61, 653–670.

Pedroni, Peter (2000) Fully Modified OLS for Heterogeneous Cointegrated Panel. *Advances in Econometrics* 15, 653–70

Pill, Hum R. and Mahmood Pradhan (1995) Financial Indicators and Financial Change in Africa and Asia. Washington: IMF. (IMF Working Paper No. 95/123).

Ranciere, Romain, Aaron Tornell, and Frank Westermann (2006) Decomposing the Effects of Financial Liberalisation: Crises vs. Growth. (IMF Working Papers).

Ricardo, David (1819) *On the Principles of Political Economy and Taxation*. London: John Murray.

Rivera-Batiz, L. A. and Paul M. Rumer (1991) International Trade with Endogenous Technological Change. *European Economic Review* 971–1004.

Rumer, Paul. M. (1986) Increasing Returns and Long-Run Growth. *Journal of Political Economy* 94:5, 1002–1037.

Say, Jean Baptiste (1803) A Treatise on Political Economy or the Production, Distribution, and Consumption of Wealth.

Shaw, E. S. (1973) *Financial Deepening in Economic Development*. London: Oxford University Press.

Smith, Adam (1776) An Inquiry into the Nature and Causes of the Wealth of Nations.

Stiglitz, J. E. (1994) The Role of the State in Financial Markets. *Proceedings of the World Bank Annual Conference on Development Economics*, pp. 19–52.

Stultz, R. M. (1999) Globalisation, Corporate Finance, and the Cost of Capital. *Journal of Applied Corporate Finance* 12:3, 8–25.

World Bank (2013) *World Development Indicators* (2013). Washington, DC.