Assessing the Relationship between Financial Globalization Uncertainty and Financial Development: Cross Country Empirical Evidence

By

Salita

Supervisor

Dr Attiya Yasmin Javid

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Department of Economics

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CERTIFICATE

This is to certify that this thesis entitled: **"Assessing the Relationship between Financial Globalization Uncertainty and Financial Development: Cross Country Empirical Evidence"** submitted by Ms. Salita is accepted in its present form by the Department of Economics, Pakistan Institute of Development Economics (PIDE), Islamabad as satisfying the requirements for partial fulfillment of the degree of **Master of Philosophy in Economics**.

External Examiner:

Dr. Anwar Shah
Assistant Professor
School of Economics
Quaid-i-Azam University
Islamabad

Supervisor:

Dr. Attiya Y. Javid
Acting Dean/Professor
PIDE, Islamabad

Head, Department of Economics:

Dr. Karim Khan
Associate Professor/Head
Department of Economics
PIDE, Islamabad

DEDICATIONS

This thesis is dedicated to my parents for providing me with unfailing support and continuous encouragement throughout the process of writing this thesis. This accomplishment would not have been possible without them.

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I wish to express gratification to Allah Almighty for giving me capability, perseverance, courage and determination to complete this work in time.

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List of Abbreviations

ADF Test	Augmented Dickey Fuller Test
AIC	Akaike Information Criterion
AR	Autoregressive
ARDL	Autoregressive Distributed Lag
DEA	Data Envelop Analysis
DMEs	Developed Market Economies
ECB	European Central Bank
EG	Economic Growth
EMEs	Emerging Market Economies
ER	Exchange Rate
EU	European Union
FD	Financial Development
FDI	Foreign Direct Investment
FG	Financial Globalization
FGI	Financial Globalization Index
FGLS	Feasible Generalized Least Square
FGU	Financial Globalization Uncertainty

FL	Financial Liberalization
FMEs	Frontier Market Economies
FO	Financial Openness
FPI	Foreign Portfolio Investment
GARCH	Generalized Autoregressive Conditional Heteroskedasticity
GDP	Gross Domestic Product
GDPG	GDP Growth
GF	Global Factor
GFC	Global Financial Crisis
GMM	Generalized Method of Moments
IMF	International Monitory Fund
INF	Inflation
INV	Investment
IQ	Institutional Quality
LR	Long Run
Max	Maximum
Min	Minimum
MNCs	Multi-National Corporations

MSCI	Morgan Stanley Capital International
PCA	Principal Component Analysis
SD	Standard Deviation
SR	Short Run
TO	Trade Openness
UFGI	Unrestricted Financial Globalization Index
UK	United Kingdom
UN	United Nations
WW I	World War I

Abstract

Financial sector development always remain central of attention in economic literature, past studies depict that financial globalization uncertainty is unfavorable for financial development. This study aims at examining the impact of financial globalization uncertainty on financial development in different type of market economies. The panel is divided into three sub-samples, it comprises of set 23 developed, 22 emerging and 20 frontier market economies for the period 1996 to 2016. To resolve the issue of endogeneity this study relays upon dynamic panel Generalized Method of Moments (GMM) for empirical scrutiny. To capture the Financial Globalization Uncertainty study takes into account both de-jure and de-facto measures, similarly Financial Development index is constructed by applying Principal Component Analysis (PCA). Empirical results verify that financial globalization uncertainty negatively affect financial development in each market economy i.e. developed, emerging and frontier. Set of control variables consists of inflation, Institutional Quality, investment and Trade Openness. Evidence demonstrates that Institutional Quality and investment have positive whereas inflation has adverse consequences for financial sector in each market. Trade Openness variable emerges as positive and significant for emerging and frontier markets. On the basis of empirical findings this study suggests that all market economies shall establish strong institutional setup to achieve higher financial development.

Keywords: *Dynamic Panel GMM, Market Economies, Principal Component Analysis and Institutional Quality.*

Chapter 1

Introduction

1.1 Background of Study

Financial globalization is not a new concept, in fact the capital account liberalization initiated a century ago. Formerly, only the small number of countries opts for financial globalization but in today's world nearly every country adores liberalization policies. The period 1870 to 1913 served as an early stage of financial globalization, the notion of financial globalization came about with the establishment of international gold standard system. In the given period the poor fund management, excess lending and unregulated banking system gave rise to the series of crisis in banking sector. Additionally, the World War I (WWI) proved to be an obstacle in enduring financial globalization policies. The period 1919-1939 persisted to be volatile, because in this era there was stock market collapse in 1920s and great depression (Arestis et al., 2005). Likewise, WWII period is also categorized as restricted as fixed Exchange Rate (ER) policy is implemented. In 1950s and 1960s financial globalization remained minimal, countries follow Bretton Wood system as well as restrictions on capital mobility. Oil price shock and collapse of Bretton wood system give rise to new era of globalization. Due to crisis developed countries face problem of stagflation therefore to curb this issue tight monetary policy is used. Developing countries suffer equally, the balance of payment and public debt crises emerge. To cope with the situation, such nations look for international capital inflows in form of debt (Reid, 2010). From 1970s onward the process of financial globalization has again gained

importance, this era is mark with high degree of financial globalization. As a consequence, the financial flow become volatile and crisis emerge as an outcome for instance Asian crisis in 1997, this gave rise to a debate upon role of financial globalization.

In theoretical literature there are distinct views upon the role of financial globalization. Neo classical economists favor the globalization of financial system, they perceive it as a source of capital accumulation. Solow (1956) argues that capital growth supports in process of catching up. In accordance, various economist emphasis on financial development enhancing function of financial globalization for instance Fischer (1998) contends that financial globalization facilitate domestic economic agents in portfolio diversification, correspondingly provide financial facilities for starting any new investment. Therefore besides economic development, it augments financial development. Bhagwati (1998) demonstrates as a skeptic and opposes Fischer (1998) that financial globalization is advantageous. He reveals financial globalization causes disasters that deteriorate both financial development and growth. In the same manner, conflicting with neo classical economist Stiglitz (2000) agrees with Bhagwati (1998) and shares the view that financial globalization imposes much cost on developing countries in form of capital outflow, hence contracts the level of financial development.

Some of the countries followed policies of Neo-Classical school of thought in the era of 2000s also. However, after implantation of liberalize policies, the costs become apparent in form of crisis. Exchange Rates are again kept as flexible, in this modern era of financial globalization banking crisis re-emerge (Arestis et al., 2005). Likewise, the Global Financial Crisis (GFC) of 2008 affect the markets across globe, after this severe crisis, economist devote much attention towards financial globalization uncertainty (Garcia,

2012). Aspect of financial globalization uncertainty gained importance after the advent of this crisis.

Countries that had been experiencing surges in foreign capital inflows have had to experience decrease in these flows during Global Financial Crisis (GFC). This uncertainty in financial flows give rise to a long standing debate about role played by financial globalization uncertainty in influencing the financial sector of these nations. The financial globalization uncertainty means when the financial inflows towards the domestic country become uncertain or unpredictable. Along with external factors, domestic factors like restrictions on capital account openness can enhance the financial globalization uncertainty. Capital account liberalization allows for more efficient global allocation of capital, from capital-rich industrial countries to capital-poor developing economies. But if restrictions are imposed by domestic policy maker then financial inflows to developing countries also diminish. In this way, domestic factor can also be a cause of volatile financial inflows. Development in size, efficiency, stability and access to financial system is termed as Financial Development. External financial inflows assist in increasing domestic financial development whereas Financial Globalization Uncertainty is unfavorable to financial development. Because in the phase of financial globalization uncertainty the financial inflows become volatile. As financial development depends upon not only domestic sources but also on external financial flows, so in the period of financial globalization uncertainty the banking sector suffer losses and ultimately the financial development contracts.

There is no consensus of economists upon the role played by financial globalization uncertainty in influencing financial development. Uncertainty in financial inflows can

positively or negatively affect the financial development based on type of economy i.e. developed, emerging and frontier. IMF (2007) maintains that in some situations, there might be indication of no relationships between financial globalization uncertainty and financial development. Because this relation depends on number of factors, for instance if an economy has already enough developed financial sector then it could easily absorb the shock of vulnerability without shrinking the financial development. In the same way, the institutional quality and domestic macro-economic policies also play a role in validating the relationship. So, developed countries can easily cope up with financial globalization uncertainty, and it does not influence domestic financial sector of developed market economies. Sharing the same views, Broner & Rigobon (2004) argue that characteristics of developed market economies like good quality institutions and high per capita income makes their financial sector less exposed to volatile flows. Contrary to it, Ocampo (2000) interprets that financial globalization uncertainty leads to financial sector crisis, macroeconomic instability and collapse of growth in emerging market economies. In line with it, Mishkin (2007) views financial globalization uncertainty as damaging for the banking sector of emerging market economies. Reddy (2006) also agrees that external imbalances transferred from developed countries and disturb the financial markets of emerging market economies. Massa & Velde (2008) and Motelle & Biekpe (2014) also deem that financial globalization uncertainty is detrimental to domestic financial development, as it give rise to crisis in domestic banking sector in emerging market economies. Conflicting with these stated views, Asongu et al. (2017) and Agenor (2003) believe that financial globalization uncertainty can have positive implications for domestic financial sector of emerging and frontier market economies, according to them financial

globalization uncertainty is a signal for such countries to not rely solely on international flows for development instead built their own strong institutions to achieve efficient financial sector. According to UN (2010) the frontier market economies are also more vulnerable to external shocks, but the impact of Global Financial Crisis (GFC) was less than expected. Because the institutions like International Monetary Fund (IMF) and World Bank (WB) provide the assistance due to which uncertainty in private financial flows is partly offset. Baba & Baba (2013) contend that financial globalization uncertainty is harmful for financial sector of frontier market economies.

The facts and figures illustrate that the level of Financial Development (FD) attain by nations is not identical. The developed nations not only have extraordinary growth rates but also possess stable financial sector accompanying sufficient amount of financial development. In the same way, the volume of financial development differs in each market economy. Comparison demonstrates that developed market economies comprise remarkable amount of financial development, emerging market economies have moderate level of financial development, whereas among all other markets frontier market economies contain the lowest quantity of financial development. Developed market economies attain the highest average value of 90 units[1], but frontier market economies and emerging market economies lie far beyond from developed market economies with the utmost average value of 65 units of financial development. Likewise, the financial globalization uncertainty data shows that financial globalization uncertainty is unfavorable for all types of market economies, but developed market economies face comparably lower amount of financial globalization uncertainty.

[1] Total units are 100

Developed market economies are more financially developed compared to emerging and frontier market economies. Emerging market economies have moderate level of financial development, on the other hand the frontier markets are least financially developed. Similarly, the view of past researcher about the impact of financial globalization uncertainty on financial development is different for each market economy. To analyze the influence of financial globalization uncertainty on financial development the sample is divided into three different market types. Morgan Stanley Capital International (MSCI) divide economies on the basis of some criterions like economic development, size and liquidity requirement, and market accessibility. This study utilizes MSCI division of market economy, and it employs three main kinds of market economies i.e. developed, emerging and frontier.

1.2 Objectives of Study

The key objective of the study is underneath:

- To empirically scrutinize the relation between financial globalization uncertainty and financial development.

The null hypothesis of this study is:

$H_{0:}$ Financial Globalization Uncertainty enhances Financial Development.

1.3 Contribution of Study

Literature reveals that there is linkage between financial globalization and financial development. Financial globalization is mark with extreme volatilities for instance Asian crisis of 1997 and GFC of 2008. Opponents of financial globalization allege that such volatility and uncertainty lead to inefficiency in financial system.

Adequate body of literature emphases on financial globalization and financial development relationship but there is no consensus that impact of financial globalization uncertainty on financial development is positive or negative. This study contributes in the growing body of literature, as it intends to cement this research gap[2] by adding a new dimension of uncertainty in financial development literature. It assesses the relationship between financial globalization uncertainty and financial development for developed, emerging and frontier market based economies separately[3]. Furthermore, many of past studies relay upon only a single measure to capture, but financial development is a broad concept only a single indicator cannot reveal the actual level of financial development in an economy. Therefore, taking into account the multidimensional nature of financial development and financial globalization uncertainty, the current study employs different indicators to capture each possible dimension.

1.4 Significance of Study

This will increase the understanding of investors, financial analysts, policy maker how uncertainty of financial globalization effect financial development belonging to the set of markets. Macroeconomic sector is keenly important for the smooth working of an economy, therefore some relevant policy implication based on empirical analysis are also drawn which can prove valuable for policy makers.

[2] There is no study to the best of my information that has done this empirical analysis by segmenting sample on the basis of different types of market.

[3] This division is based upon MSCI market frame which depends on following criteria i.e. economic development, size and liquidity requirements and market accessibility criteria.

1.5 Organization of Study

The study is segmented into six chapters. Chapter 1 aims at presenting the topic whereas in chapter 2 reviews the past studies relevant to the current topic, and it also underlines the research gap which current study aims to cement. Chapter 3 provides an overview of financial development and financial globalization uncertainty for developed, emerging and frontier market economies individually. Chapter 4 targets the methodology undertaken to fulfill objective of study, and describes the data and variables employed. Chapter 5 reports the results obtained after implementing the empirical approach. The final chapter 6 concludes the whole study as well as accounts the relevant policy implications based on study.

Chapter 2

Literature Review

2.1 Introduction

This unit aims at appraising the past research undertaken in the context of financial globalization and financial development. This unit is sub-divided into different segments, section 2.2 reviews the theoretical researches whereas section 2.3 evaluates the empirical researches done on the relevant topic. The final section 2.4 intents to highlight the literature gap and concludes the whole chapter.

2.2 Theoretical Review

In this section theoretical studies pertinent to the topic are reviewed. Underneath is the theoretical review of studies

Neo classical school of thought highlights the advantages of financial globalization and fortifies countries to adopt such kind of liberalization policies. Inflow of investment assist developing countries in capital accumulation. This capital accumulation proves to be valuable in catching up the level achieved by developed countries (Solow, 1956). According to Solow (1956) the insignificant accumulation of capital leads to stagnation in economy therefore only massive inflow of capital is advantageous for progress in catching up process.

Financial globalization is beneficial for developing countries also, as it enables investors to diversify their portfolio. Therefore investors can purchase foreign bounds and get high return. As financial globalization is central for diffusion of new financial technologies across countries, due to it the domestic financial sector also becomes efficient

(Fischer, 1998). Another benefit is that free movement of capital contributes in allocation of savings across globe, hence the productive usage of these savings directly boost Economic Growth (EG). It is argued that along with benefits there is also cost associated with financial globalization. One of the example of such destructive cost is Asian crisis. Thus it is suggested that in order to avoid such crisis, financial sector shall be given priority along with liberalization. Fischer (1998) shares the view that on average the net benefit from financial globalization would outweigh the cost.

Most common problem of developing economies is debt crisis, therefore countries have to look for lender of last resort. International institutions like IMF that rescue in phase of crisis are termed as lender of last resort. International capital flows like investment and equity finance can provide an opportunity for risk sharing. Perhaps these internal flows do not guarantee a rapid surge in domestic stock market, but still as a consequence of these flows countries need not to relay upon crisis manger like IMF (Rogoff, 1998). Rogoff (1998) discusses that liberalization of equity market has distinctive advantages like it can give rise to high growth rates and assists in efficient allocation of investment. It is concluded that FL can incentivize in improving the role of domestic as well as international institutions. Furthermore, balance between debt and equity enriches risk sharing ability and reduces the financial instability.

Free movement of goods and services alters from free flow of capital. While trading goods and services both countries can be benefited, contrary to this in free flow of capital one country gains and other loses (Bhagwati, 1998). It is discussed that financial globalization proves to be a reason for emergence of economic crisis in many economies. The economy face another problem of capital outflow in epoch of crisis. In order to restore

the inflow of credit the only option for economies is to raise the interest. Consequences of such policy left domestic firms with debt accumulation. Hence the crisis have more cost for developing countries than benefits (Bhagwati, 1998).

Stiglitz (2000) does not perceive financial globalization as beneficial, it is argued that capital account liberalization is associated with instability therefore restrictions on short-run capital flows are mandatory. The idea that restriction might lead to lower level of investment is opposed because in real world situation it can be seen that countries having short run restriction have high level of financial development I inflow[4]. In most of the developing countries capital outflows are much greater than inflows therefore for such countries cost associated with liberalization overshadow the benefits. Furthermore it is debated that financial globalization aggravates the fluctuations in an economy and its behavior is pro cyclical. Investors take out money from the economy in phase of economic down turn and invest in other countries thereby intensifying the instability in domestic country.

Financial globalization uncertainty causes decline in growth rates, one of the reason is currency crisis. Rapid fluctuations in exchange rate destabilizes domestic financial market by increasing capital outflows. Depreciation of domestic currency lessens the real income and spending. Instable exchange rate increase foreign liabilities and reduction in creditworthiness of domestic borrowers. These all factors deteriorate the lending rates and further worsens the already sick domestic market (Summers, 2000). It is recommended that in pace of crisis an effective role of private sector succor to resolute the crisis and in

[4] Practical example of china is quoted, china has imposed restrictions on capital account liberalization but still has very high financial development I inflow.

building the confidence of foreign investors can prove as catalyst. It is concluded that a comprehensive financial system has massive advantages like EG and capital inflows. Foreign inflows benefit countries in filling the Okun gaps and in achieving LR sustained growth rates.

In domestic country there are basically the four mediators that partake in financial globalization, these includes financial institutions, government, investors and borrowers. Government can deepens financial globalization by removing restrictions on cross border flows, similarly participation of international institutions enhances competition and ensures a stable business environment for foreign investors. Likewise firms can acquire finance by issuing equity and bond in international market thereby escalating investor base. Schmulker (2004) explains that financial globalization upturns financial development via two channels. The first channel is financial globalization provides a new source of fund, consequently the domestic borrowers relay on both domestic and foreign sources of fund. It is discoursed that capital inflows would be higher if foreigner investors perceive that developing country can easily catch up. The second channel through which financial development increases is, financial globalization expands financial infrastructure, and hence borrowers and lenders play their role in transparent environment. This feasible environment aid in information symmetry and in expansion of credit. It is concluded that financial globalization is beneficial for domestic financial development, there is no doubt that it may leads to crises but still over the long run it gives rise positive outcomes.

Financial globalization plays a significant role in boosting financial development. Countries opt for financial globalization possess adequate degree of financial development compares to countries that opt restricted policies. As a result of liberalization foreign bank

also play their role in domestic country. Involvement of foreign banks encourage country in accessing international markets. Furthermore, it also lead to induction and new financial instruments thereby increasing the quality of services (Kose *et al.,* 2009). Kose *et al.* (2009) also reveal that financial globalization allies with crisis and gives rise to volatility in domestic country. But the countries with sound development of financial sector would be less effected by such crisis. It is pondered that as financial globalization boost development of financial sector, in a similar manner financial development can provide a way to cope with crisis link with globalization. It is suggested that improvement in quality of institutions and concrete set of financial policies are beneficial for handling the economic downturn.

Financial globalization has increased for past few decades, in fact after the emergence of crisis due to globalization this process of liberalization remains inevitable. The process of financial globalization impacts the financial sovereignty of economies. Li & Zhou (2015) explain that as a consequence of globalization the domestic policy makers cannot effectively implement the monetary policy. As Mundell Flaming model highlights the three targets which policy makers aims to achieve i.e. monetary policy autonomy, stable exchange rate and capital mobility. But it is almost impossible to achieve all these three goals simultaneously, capital inflows emasculates monetary authority to maintain a stable value of currency, because along with capital the inflation is also imported in domestic country. Their study conclude that in this era of globalization a key challenge for developing countries is to protect their sovereignty.

Financial globalization can have different consequences, it may lead to capital outflow and low investment or capital inflows and high development, and similarly it can

give rise to uncertainties. Broner & Ventura (2016) confer that sequels of financial globalization are contingent on different factors like development, savings and institution's quality in domestic country. For the two reasons pessimistic equilibria emerges, firstly the domestic entrepreneurs excessively from foreigners which proliferates the default rates. Secondly, the domestic savers lend abroad instead of benefitting the domestic borrowers. In this way capital controls could assist in reducing the pessimistic equilibrium. It is suggested that if in the early phases of development domestic policies are designed to discriminate between domestic and foreigner economic agents then capital flows and investment will be maximized. Similarly at the later stages of development discrimination shall be minimized to gain advantages of financial globalization. At the later stages this policy measure will help domestic country to attain benefits from international financial market and in enhancing inflows and growth.

2.3 Empirical Review

Empirical studies done on the relevant topic are reviewed in this section, this section is sub-divided into three segments. In section 2.2.1 empirical studies undertaken for developing countries are reviewed, section 2.2.2 reviews empirical literature from developed countries only whereas in section 2.2.3 empirical studies comprising the sample of both developed and developing countries are reviewed.

2.3.1 Studies for Developing Countries

As capital account openness influences the financial development, in the same vein current account liberalization might stimulate domestic financial sector. Ho & lyke (2018) investigate the nexus between trade liberalization and financial development. Panel data

for 43 Sub-Sahara countries, covering period 1996 to 2014 is congregated. Vector of explanatory variables constitute of human development index, governance indicators and infrastructure development. Three indicators i.e. private sector credit, liquid liabilities and deposit money bank assets are taken into consideration, for quantifying the financial development. PMG (Pooled Mean Group) estimator technique is executed, to acquire Short Run (SR) and Long Run (LR) estimates. Empirical ramifications underline that over long period of time, trade liberalization fortifies the financial development. Contrary to it, in SR openness may debilities the financial development. Underline reason highlighted is, that in short period of time, inflation and exchange rate instability may dominates the domestic sector. While, in the long run the domestic economic agents reform their inflationary expectations. It is illustrated that good governance, human capital and infrastructure development are the crucial factors in augmenting financial development.

Asongu *et al.* (2017) analyze the impact of financial globalization uncertainty on financial development in 53 African economies over time period 2000-2011. Financial globalization is measured with financial account openness (FDI), uncertainty is computed by taking first autoregressive of Foreign Direct Investment (FDI). Distinct measures of financial development are taken that includes money supply, financial system deposit, financial size, banking system efficiency, activity and financial deposit. Generalized Method of Moments (GMM) technique is applied for empirical scrutiny. Results show that uncertainty increases financial system activity along with banking system activity and efficiency whereas it does not significantly affect other measures of financial development. It is held that when domestic country faces uncertainty in foreign flows then attempts are made to enhance domestic financial institutions to cover the risk of uncertainty.

Globalization is a broad concept, it apprehends all the existing factors of global arena. It is generally categorized in three forms i.e. Economic, Social and Political globalization. Shahbaz et al. (2017) conduct an empirical study to inspect the significance of each form in determining the financial development. Secondary time series data is gathered for Indian economy for time span 1971 to 2013. Model incorporate GDP growth, Institutional Quality (IQ), population growth and inflation as control variables. Granger causality test show, that both globalization and financial development granger cause each other. To identify, order of integration of each series Augmented Dickey Fuller (ADF) test is applied. Mixed order of integration is found, that advocate application of Autoregressive Distributed Lag model (ARDL). Empirical upshots are conflicting to previous findings, embodying that all forms of globalization tend to deteriorate financial development. Correspondingly coefficient of inflation and institutional quality emerge as negative and statistically significant, however, GDP and population growth establish an enriching impression on financial development. It is concluded that a good IQ could proof as a mediating factor in dispersing the spillover effect of globalization. Since the IQ is not up to a bench mark in developing countries, therefore the positive spillover influences of globalization are not disseminated.

Along with Financial Openness (FO), Trade Openness (TO) also stimulate development of financial sector. Zhang et al. (2015) empirically inquest the association among TO, FO and financial development. Sample comprises data of 40 China's provinces for period 2000-2009. TO and FO are designated as core variables. Set of control variable encompass GDP, enrollment rate and government spending. Distinct dimensions of financial development like efficiency, competition and size of financial sector are

considered. To calculate FO, FDI to GDP ratio is used, similarly, for quantifying TO the ratio of total exports and imports to GDP is employed. Dynamic panel GMM estimation technique is utilized for empirical assessment. Co-efficient of both financial and TO is found to be positive and statistically significant for efficiency and competition of financial sector, whereas, in case of size of financial sector the openness has negative and significant impact. Empirical findings demonstrate that, this efficiency and competition enhancing effect is greater for more open provinces. It is concluded that the insignificant impact on the size of financial sector development, is due to the credit misallocation formed by state owned banks.

Financial globalization can be verified as beneficial in mitigating the effect of business cycles, as a consequence of integration domestic investors can borrow from foreigners in period of economic downturn similarly they can lend to foreigners in period of boom (Garcia, 2012). In this way financial globalization contributes towards the financial development of domestic sector. Garcia (2012) scrutinizes the relation between financial globalization and financial development for transition economies. Financial development is taken as dependent variable, as it is a multidimensional phenomenon so in order to capture it distinctive measures are taken into account. Indicators of stock market like stock market capitalization, turnover and that of credit markets comprise deposit ratio, liquid liabilities, financial system deposit, bank credit over deposit are utilize. For the financial globalization two variables i.e. private capital flow and interest rate integration are taken into consideration. The latter is computed by taking difference of domestic and foreign interest rate. To find empirical results GMM is applied. Results denote that

financial globalization only significantly influence the indicators of credit market whereas in case of other variables the coefficient remains insignificant.

Current and capital account openness can affect the financial development through various means, law (2009) explores possible channels by which openness can influence financial development. Secondary data for 22 developing countries is collected for period 1980 to 2003. Distinctive indicators namely private sector credit, liquid liabilities, domestic credit, financial size and financial activity are taken as a measure of financial development. Set of explanatory variables consist of private flows, Trade Openness (TO), rule of law, institutions and competition. Interaction term of TO with institutions and competition is incorporated into the analysis. Dynamic GMM is taken into consideration for empirical analysis. Fallouts indicate that trade and capital account openness escalate the growth of banking sector whereas impact of financial activity and size is insignificant. Similarly, the interaction term illustrates that both institution and competition play a key role in diffusing the positive effect of openness on financial development. It is argued that in developing countries the financial development is determined by banking sector hence it is more influenced by openness.

Ito (2006) check out the tie amid financial development and capital account liberalization, panel data analysis entailing set of 87 Asian developing countries for period 1980 to 2000 is escorted. Explained variable is enumerated by private credit, stock market capitalization and stock market value. Explanatory variables designated are Trade Openness (TO), Financial Openness (FO), inflation and institutional setup. Institutional Quality (IQ) is quantified by an index, PCA (Principal Component Analysis) is applied to merge the measures like law and order, control of corruption and quality of bureaucracy.

Similarly, an index based on de-facto measures is taken into account for gauging FO. Estimates attain after regression evaluation exhibit that FO has insignificant impact on financial development , but the interaction of FO and IQ indicate that in the presence of strong legal structure, FO enrich financial development. One astonishing finding reveal that compared to financial institutions, legal institutions play a more effective role in enhancing financial development. Outcomes authorize that inflation weakens whereas TO strengthens financial development. Reverse causality test is also executed to assess whether financial development also cause FO, the null hypothesis is rejected by findings. It is upheld that FO impacts financial development in the presence of institution's role however financial development does not ensure the openness of capital account.

2.3.2 Studies for Developed Countries

Countries in today's world are more inclined towards implementation of liberalized policies consequently for some decades financial globalization is increasing. Frost & Tilburg (2014) empirically survey that whether this highly level of globalization assists in financial expansion. Secondary data for 43 advance countries is taken from period 1975 to 2011. In order to capture financial globalization Gross international capital flows are used as proxy, whereas for financial expansion credit growth and credit gap is employed. Credit gap is computed by taking difference of credit from GDP trend. Feasible Generalized Least Square (FGLS) is applied in to carry out empirical analysis. Results indicate that foreign inflows have a significant impact on credit growth and this effect is greater for emerging markets compares to developed market economies. It is discussed that credit growth can lead to vulnerability and even is a cause for banking crisis, therefore it is

recommended that along with liberalization policies financial reforms and regulations are require to overcome vulnerability.

Al-Mulali & Sab (2012) investigate the LR association among energy consumption, CO2 emission and financial development. Sample covers set of 19 developed countries for period 1980 to 2008. Three distinctive measures of financial development i.e. broad money, credit to banking sector and credit to private sector is taken into consideration. CO2 emission and primary energy consumption are taken as core explanatory variables. Im, Pesaran, and Shin and the Fisher-ADF panel unit root tests are applied to check whether the series is stationary. Results indicate the presence of unit root series. To check the long run relationship Pedroni Co-integration test is employed. Pedroni test results confirm the existence of LR relation. Granger causality based on Vector Error Correction Model (VECM) is used to get SR and LR causality. Results support that there is bi-directional causality between CO2 emission, energy consumption and financial development.

Liquidity is a crucial factor for working of financial markets therefore financial crisis may impact it. Vodova (2012) scrutinizes the effect of financial crisis on bank's liquidity, along with it other determinants effecting liquidity are also explored. The study is conducted for Poland over period 2001 to 2010. Four measure[5] of liquid ratios are taken, regressors included unemployment rate, dummy variable gauging financial crisis, GDP growth, inflation and interest rate. Panel regression technique is utilized for empirical analysis. Coefficient for financial crisis is found to be negative and significant confirming that financial development is negatively affected by crisis. Similarly the unemployment

[5] i.e. liquid assets to total assets ratio, liquid assets to deposit ratio, loans to total assets ratio and loans to deposit ratio.

rate also decreases the development of financial sector. It is concluded economic state of a country is a key factor in determining the development. Sluggish EG and financial crisis have negative implications for liquidity growth.

Hwang (2002) sightsaw the factors determining financial development in South Korea, quarterly data from period 1973 to 1997 is taken. Monetary aggregates M1 and M2 are used for measuring the financial development. Set of independent variables contain SR interest rate, LR interest rate and real income. Unit root test is employed to diagnose about the stationarity of the series. ADF test result confirm that series has unit root. Therefore Johannsen Co-integration test is utilized to obtain the LR coefficients. Results indicate that real income, LR and SR interest rates are integrated with broad money whereas these variables do not affect narrow money over LR. It is concluded that LR interest rate play a dominant role compared to SR interest rate in determining the financial development.

2.3.3 Studies for Both Developed and Developing Countries

Baum et al. (2017) probe that in what manner macroeconomic uncertainty influences the financial development. Secondary data is gathered for set of 89 high and low income countries covering period 1996-2015. Inflation uncertainty is termed as macroeconomic uncertainty, and for computing uncertainty autoregressive (AR) model is estimated. Different indicators to seize depth, efficiency and stability of financial sector are occupied. Variables of financial development comprise domestic credit to private sector, total private sector credit, bank return on equity, non-interest income to total income, total liquidity and non-performing loans. GDP growth, Trade Openness (TO), bank concentration ratio, debt ratio and foreign banks are termed as control variables. Regression analysis is performed for empirical appraisal, fallouts designate that uncertainty has diminishing impact on all

aspects of financial development. Positive and significant co-efficient of banking crises instigate that, during phase of crisis central banks intervene in financial markets, and opt expansionary credit policies. Other control variables sustain insignificant co-efficient. As robustness check, empirical scrutiny is accomplished for developed and developing countries distinctly. Results exhibit that uncertainty always has detrimental impact on financial sector, and this effect is isolated with EG of country.

Chen et al. (2016) assess the long run and short run impact of financial globalization on financial development. Secondary data for 70 developed and developing countries, covering period 1980 to 2011 is taken. Financial development is proxied by two variables broad money and private domestic credit. Financial globalization is quantified by employing an index, which relay on de- jure measures. Pooled mean group estimator technique is taken into account for empirical analysis. Results indicate that over long run financial globalization boosts financial development whereas for short run results are contrary to prior expectations. Thus as a robustness check Chen et al. (2016) also estimate the model with GMM, the new model considered a new variable of banking competition. Interaction term of this variable with financial globalization is introduced to evaluate how a competitive banking system could mediate the effect of financial globalization. Empirical findings signify that financial globalization play a significant role in improving financial development. Similarly the interaction term is found to be statistically significant, designating that in the presence of comprehensive banking setup financial globalization could play a vital role in augmenting financial development. Hence it is concluded that SR influence of financial globalization on financial development depends upon the efficiency

of domestic banking sector. In the presence of uncompetitive banking sector, financial globalization might have adverse consequences for financial sector.

Khalfaoui (2015) sightsee the determinants of financial development, in 23 developing and 15 developed economies, covering period 1997 to 2013. Financial development is reckoned by credit available to private sector. Key independent variables constitute of inflation, current account deficit, index of credit information and IQ index, whereas private investment, TO and human capital are taken as control variables. For empirical inquiry panel regression is executed, results reveal that institutional framework and macroeconomic stability have different implications for developed and developing country. Latter variables significantly affect financial development in developed countries only. Similarly TO inspire financial development in developed countries, however, it weakens financial development in developing nations. Economic and human development encourage financial development in both class of economies. It is deduced that stability and institutional setup is necessary for the working of financial system.

Financial system is a path to disseminate financial resources to investors, Ayadi et al. (2013) search for the underline factors that could prove to be a hurdle in allocation of credit and worsening financial development. Sample cover data of North and South Mediterranean nations for years 1985 to 2008. Financial development is figured by six varied indicators viz. bank credit to private sector, bank deposits, technical growth rate, meta-efficiency, stock market capitalization and total traded value of stock market. Set of regressors encircle Financial Openness (FO) index, index measuring legal and institutional structure and government debt. Empirical findings are established from random-effect panel regression model. After empirical reconnaissance, it is found that inflation and

government debt destabilize the growth of financial sector. Crowding-out effect is verified by the findings, due to excessive debt accumulation by public sector, credit availability to private investors remain diminutive, consequently it diminish financial development. Strong institutional and legal framework of country expand credit and deposit. Correspondingly, FO significantly increase credit, deposit, technical growth and meta-efficiency of the banking sector. Ayadi et al. (2013) concluded that basically the public sector debt create obstacles in credit allocation, and in shrinking the growth of financial sector. It is suggested that government expenditure shall be abridged in order to eliminate the crowing out effect of private investment. Furthermore, extensive reforms in financial sector are required for the growth of financial sector.

Ozkok (2010) endeavors to quantify financial globalization and development in order to assess empirical linkage between both. Secondary data for 61 developed and developing countries is utilize for period 1996 to 2007. Distinct indexes for both financial development and financial globalization are constructed by using principal component analysis (PCA). financial globalization is measured by computing components for FDI , FPI inflow and debt issue whereas financial development is obtained by applying PCA on variables like liquid liabilities, private credit, total bank assets, domestic credit, stock market capitalization and bond market capitalization. Set of control variables contains GDP per capita, TO, enrollment rate and institutions.[6] Dynamic GMM is employ for empirical analysis. Results point out that financial globalization expands the level of financial development, similarly coefficient for TO, enrollment rate and GDP also show enhancing

[6] Includes rule of law, government effectiveness, control of corruption and regulatory quality.

effect. Whereas IQ variable emerges with significant and negative sign. Results obtain for IQ are contrary to what past literature reveals.

Liberalization of stock market can also influence the financial development, Naceur et al. (2008) assess the empirical relationship between stock market openness and financial development. Secondary data for 11 MENA countries covering period 1979 to 2005 is taken. For evaluating the openness of market time dummies for each country are introduced in the model, these dummies take value 1 for years of liberalization. Financial development variables comprise value traded, market capitalization, credit to private sector and stock index. Inflation and TO are taken as control variables. Fixed effect regression is employed for empirical exploration, results indicate that in SR stock market liberalization declines financial development whereas over LR it enhances the financial development. In SR inflation negatively and significantly affect financial development similarly in line with theory co-efficient of TO appear to be positive and significant illustrating that to increase the efficiency of financial system, liberalization is required. It is concluded that policies targeting financial development will significantly effect it but only after some time gap i.e. in LR.

Financial globalization is a broad concept therefore one cannot take only a single variable as proxy to capture it. Chinn & Ito (2002) attempt to construct an index of financial globalization for 105 countries over period 1970 to 1997. Index is constructed by taking into account the first principal of component of multiple exchange rate, capital controls and export proceeds. After construction of index, empirical relation between financial globalization and financial development is determined. Likewise financial globalization, financial development is also a broad concept hence to capture it diverse measures are

taken into account, these measures include liquid liabilities, private credit, value of stock traded and stock market turnover ratio. Set of control variables comprise inflation, TO and per capita income. In order to carry out empirical examination Instrumental variable regression is run. Result specifies that FO positively affect private credit whereas it has weak association with liquid liabilities. Similarly there is no impact on stock market capitalization, while it significantly and positively impacts stock market turnover. Control variables[7] appear to be positive and significant whereas inflation appears with negative sign indicting detrimental effect on financial development.

2.4 Conclusion and Research Gap

This section summaries the work done by the past research related to financial globalization and financial development relation. It is evident from the above cited literature that it fails to encompass relation between financial development and the financial globalization uncertainty. The present study contributes in the literature by scrutinizing the relationship between financial globalization uncertainty and financial development across different market economies. The studies conducted in past have taken single indicator to capture financial development whereas this study constructs an index capturing all the dimensions of financial development. Additionally, this study utilizes a different measure of financial globalization, and for calculating uncertainty it employs autoregressive method.

[7] per capita income and TO

Chapter 3

Overview of Financial Development and Financial Globalization Uncertainty

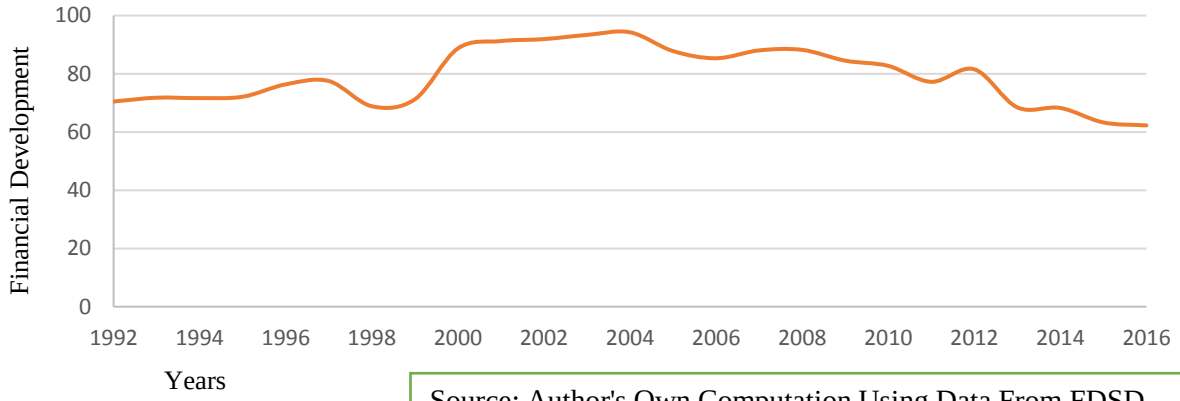
3.1 Introduction

In this chapter the behavior of two economic variables i.e. Financial Development (FD) and Financial Globalization Uncertainty (FGU) for three categories of market economies individually. Therefore this chapter is segmented into six distinctive sections, the first three sections i.e. one, two and three aim at graphically enlightening the role of Financial Development in developed, emerging and frontier market economies. Graphical analysis of Financial Globalization Uncertainty is carried out for developed, emerging and frontier market economies in section four, five and six respectively.

3.2 Financial Development (FD) in Developed Market Economies (DMEs)

Section 3.2 deals with graphical analysis of Financial Development (FD) in Developed Market Economies (DMEs). Figure 3.2 depicts the average level of FD in these economies for period 1992 to 2016. It is clear from the graph that in early decades of 2000 i.e. from 2001 to 2004, these economies attain the highest level of development. Whereas in the second half of 2000s, graph illustrates a decreasing trend in average level of financial development. Therefore a minimal level of development is seen in year 2016.

Figure 3.2: Depicting Graph of Average level of Financial Development in Developed Market Economies over Period 1992 to 2016.



Source: Author's Own Computation Using Data From FDSD

Figure 3.2: Graph of Average level of Financial Development in Developed Market Economies

In early decade of 1990s world output grew faster and prosperity is witnessed in financial sector also, it continued till 1996. After this, crisis emerged termed as Asian crisis, these crisis effected not only developing but also developed nations (IMF, 1998). Some of the developed countries[8] face recession and crisis in their banking sector in later years of 1990s, therefore the financial development remained low. In early 1990s economy of Japan faced a huge decline in credit and money growth due to breakdown of stock market (ECB, 2012). Crisis of 1998, along with internal detrimental situation posture negative consequences and further worsened the condition of Japanese economy (IMF, 1998). Canada implemented the tight monetary policy and increased short term rate in year 1997-98. On the other hand, European countries planned to form monetary union in year 1999, therefore each member country have to equalize their short and long term interest rates. To achieve this objective, different countries had taken stance in year 1998, for instance, UK and Finland adopted tight monetary policies and increased interest rates. Most of the

[8] Austria, Australia, Belgium, Netherlands, Italy, Germany, France, Canada, Japan, New Zeeland, UK and USA.

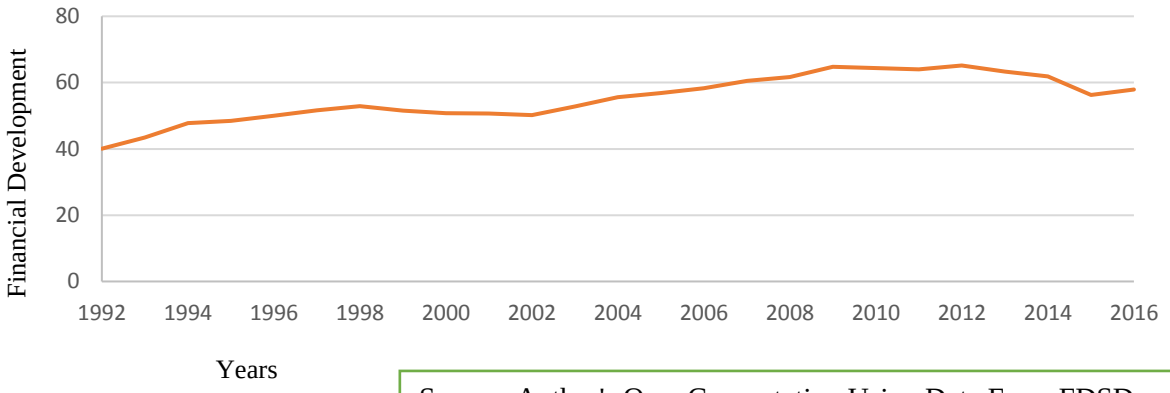
countries in 1998 followed tight monetary policies (IMF, 1998). The underline cause for low level of financial development in year 1998 could be the Asian crisis, the stagnation of Japanese economy and tight monetary policy, as a result financial development decrease from 77% in year 1997 to 68% in year 1998.

In early 2000s countries move towards financial liberalization and faced low volatility in their growth, this gave rise to credit expansion therefore extension in private sector credit occurred in DMEs (Frost & Tilburg, 2014). That's why the graph is showing an increasing trend in the first half of 2000. Another time, from 2008 to 2010 countries have to cope with same problem of crisis (ECB, 2012). A declining trend is observed in average level of financial development, this is because of the fact that credit growth lag behind the real business cycle. Credit growth diminishes after the decrease of real business activities (ECB, 2012). Advance economies have more exposure cross border financial flows, hence the global volatility in financial sector also transmitted to such economies (Frost & Tilburg, 2014). Afterward, the declining trend is shown in the financial development.

3.3 Financial Development (FD) in Emerging Market Economies (EMEs) `

Section 3.3 assess the trends in average level of Financial Development (FD) in Emerging Market Economies (EMEs). Figure 3.3 portrays the average level of financial development in these economies for period 1992 to 2016. It can be seen from figure below that in year 1992 financial development remained at minimal level whereas from 2010 to 2014 it achieved a higher value. In later years of 2000s it again declines.

Figure 3.3: Depicting Graph of Average level of Financial Development in Emerging Market Economies over Period 1992 to 2016.



Source: Author's Own Computation Using Data From FDSD

Figure 3.3: Graph of Average level of Financial Development in Emerging Market Economies

The graph depicts that average level of financial development continue to be less in the decade of 1990s, the possible reason may be that sample comprises of Asian countries as well. In the decade of 90s, there was reduction in supply of credit. Extraction of funds by foreign bank cause decline in financial development. In late 90s average financial development increased; emerging economies instigated financial reforms that are directed to ensure less vulnerability of financial system (Khalid & Nadeem, 2017). Furthermore these reforms aimed at guaranteeing competitive markets and management of financial risk (SBP, 2017). That's why these economies recover faster from 1997 crisis and financial development enhanced afterward. Not all countries are significantly affected by crisis in 1997, it's the East Asian countries which are severally influenced. In 1996, most of the countries achieved a fair growth in overall economy as well as in their financial sector. For that reason, many of the countries performed well in 1997 also, and crisis could not alter their growth pattern (IMF, 1998). Thus the average level of financial development remained stable at 52% in year 1998. Aftermath, average financial development again

showed a declining trend. Underline cause of this was, stock market and financial sector of most of the countries weakened in mid-1997. Economies that suffered more included Malaysia, Brazil, Thailand, Philippines, Korea and Indonesia. To enhance their financial sector, these economies implemented different reforms, for instance the high rate of interest and exchange rate in the region initiated bankruptcies, thereby further deteriorated financial development (IMF, 1998). Hence the average level of financial development remained low at 52% in year 2002.

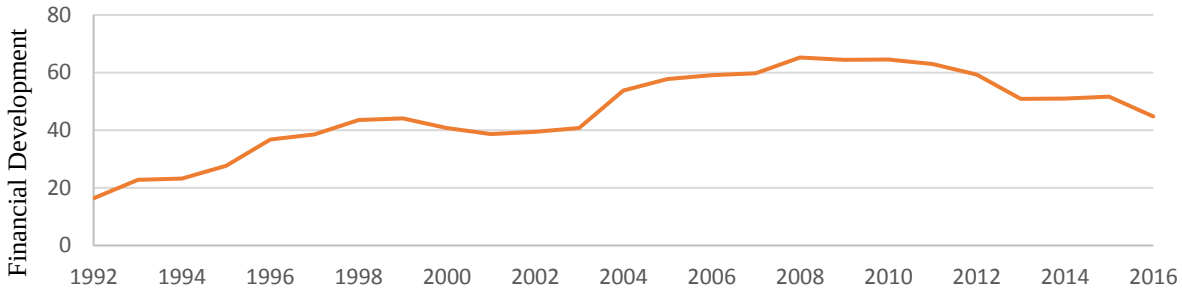
In the second half of 2000 the financial inflows remain stable since 2007 therefore the FD increase in emerging countries. In 2008 the world have to deal with financial crisis issue, but FD in this era is not that much lower. One of the possible explanation behind this is, FG crises emerge from developed countries therefore EMEs are less effected compared to 1990s crisis that originate from developing countries (ECB, 2012). Therefore these countries recover faster and large fluctuations in financial development are not seen. There was decline in banking finance after financial crisis. Contrary to it, the portfolio inflows increased in emerging economies. One of the possible reason might be the low interest rate in advance economies gave rise to low yield, therefore in order to get more yield the investors adjust their portfolio in bond markets of emerging economies. Pre-crisis banks loan played a major role for providing finance source and in increasing financial development but post crisis the bond markets development took place thus by replacing the bank loans. After crisis the financial development took place due to enhanced growth of bond market (Timmis, 2018). Aftermath GFC, adequate growth in financial development is seen in contrast to DMEs. Another possible reason for this variation might be that after crisis EMEs initiated new program that intended to enhance the lending of

private sector. Huge increase in private credit ratio is witnessed in some of the countries like Brazil, China, Malaysia, Thailand and Turkey. In 2009, China followed a new approach to enrich growth, this strategy comprised of credit driven infrastructure growth (SBP, 2017). Aftermath EMEs bubble started, hence the financial development (FD) increased from 61% in 2008 to 64% in 2009. The bubble in EMs attracted the investors for DMEs, as such markets were suffering more from GFC. Growth of bond market and infrastructure development derived credit growth in late 2000s, consequently the financial development remained stable in EMEs and it peaked at 65% in year 2012. In 2015, after the implementation of MDGs developing countries initiated reforms in their financial sector (World Bank, 2016). These reforms aimed at stabilizing the financial markets, hereafter the financial development increased to 57% in year 2016.

3.4 Financial Development (FD) in Frontier Market Economies (FMEs) `

Section 3.4 describes average level of Financial Development (FD) in Frontier Market Economies (FMEs) with the help of graphical analysis. Figure 3.4 shows the graph of average level of Financial Development (FD) in Frontier Market Economies (FMEs) for period 1992 to 2016. Financial Development (FD) remained at minimal level in year 1992. It persisted to be high from 2009 to 2011, afterward it again showed a decreasing trend.

Figure 3.4: Depicting Graph of Average level of Financial Development in Frontier Market Economies over Period 1992 to 2016.



Source: Author's Own Computation Using Data From FDSD

Figure 3.4: Graph of Average level of Financial Development in Frontier Market Economies

Average level of financial development persisted to be lower FMEs when compared with developed and EMEs. Lowest level of financial development is observed in decade of early 90s, later it showed an increasing trend. But again exhibited stagnant growth in early 2000s, in mid of 2000s it increase but in later year it again diminished and stayed at lower level.

In first half of 1990s these economies face different issues like debt and banking crisis therefore financial development decreased. But in the late 1990s FL policies are being followed by countries due to which FD is showing an increasing trend. In decade of 90s entry of foreign banks started in FMEs, due increased bank lending the average level of financial development increased. For instance in Argentina the foreign bank remained more stable and performed well compared to domestic banks. Similarly in same decade, foreign bank in Latin American countries contributed in credit growth (World Bank, 2018). Hence average financial development increased from 16% in 1992 to 44% in 1999.

Frontier Market Economies (FMEs) are not much affected by Global Financial Crisis (GFC) when compared with Emerging Market Economies (EMEs) and Developed

Market Economies (DMEs), credit growth remained high, similarly, banking sector is not much influenced. For example the subsidiaries branches of foreign banks in FMEs[9] performed well and undergone through only small amount of shrinkage in their credit compared to DMEs and EMEs banks (World Bank, 2018). In 2015-2017, cost of doing business increased in FMEs, one of the key cause remained inability of small investors to access finance. Banks and other financial institutions played a limited role and provided finance to only large scale investors. This contracted growth credit growth, and also disturbed the generation of further business activity. Aligned with it, diminution of business caused additional shrinkage of credit growth (UN, 2018).

The reason for low average of financial development in FMEs could be that, these countries are more vulnerable to macroeconomic volatility, as such economies depended more on foreign inflows, and therefore, the instability in international macroeconomic scenario distressed their internal circumstances. Furthermore, the volatility in deposit's rate of return diminished the financial deepening.

After GFC many critics highlighted the consequences of financial globalization, thus policy makers designed the restricted policies. As GFC emerged from DMEs, hence EMEs and FMEs adopted such policies. There was a limited entry of foreign banks, therefore the credit allocation also remained low (World Bank, 2018). Due to this, financial development is showing a declining trend after 2008.

[9] Specially the Latin American Countries

3.5 Financial Globalization Uncertainty (FGU) in Developed Market Economies (DMEs)

Section 3.5 aims at explaining the average level of Financial Globalization Uncertainty (FGU) in Developed Market Economies (DMEs). Underneath figure 3.5 illustrates the graph of average Financial Globalization Uncertainty (FGU) over period 1996 to 2016. Fluctuations in graph exhibit that in DMEs financial globalization is volatile. Even prior to Global Financial Crisis (GFC), Financial Globalization exhibited an unsustainable trends both in Developed Market Economies (DMEs) and Emerging Market Economies (EMEs) (Lund et al., 2013).

Figure 3.5: Depicting Graph of Average FG Uncertainty in Developed Market Economies Over Period 1996 to 2016.

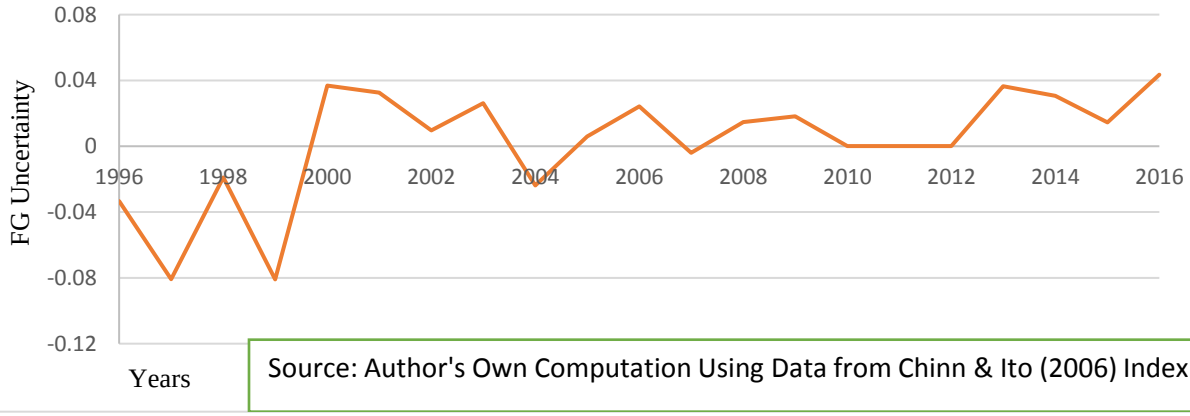


Figure 3.5 Graph of Average FG Uncertainty in Developed Market Economies

Graph depicts that FGU remained instable during late 1990s in DMEs, from 1996 to1999 FGU remained lower. Middle of 1990s Nordics countries were prone to crisis, as a way these economies picked financial globalization policies. Openness helped them to recover from crisis, in the succeeding year stock holding by foreigners and flows amplified. These economies figured the importance of integration, to become more financially stable Finland joined European Union (EU) in 1999 (Jonung, 2011). Furthermore, as argued by

Santana (2004) Foreign Direct Investment (FDI) is relatively less prone to uncertainty when compared with other flows, in 1999 FDI in DMEs stayed at high level when compared with other flows, that's why in the same year FGU remained low. Due to these reasons in late 1990s no volatility in flows is seen hence the FGU as shown in graph remained low.

In decade of 2000s also FGU exhibits similar pattern i.e. enormous rise and fall. Fluctuations can be seen from the graph even in early 2000s, Saadaoui (2013) discussed that variations in global inflows started in many DMEs even before the advent of GFC of 2008. Sharp fluctuations in financial flows are viewed in DMEs from year 2000 to 2013, these are caused by international credit and housing bubble (Lund et al., 2013).

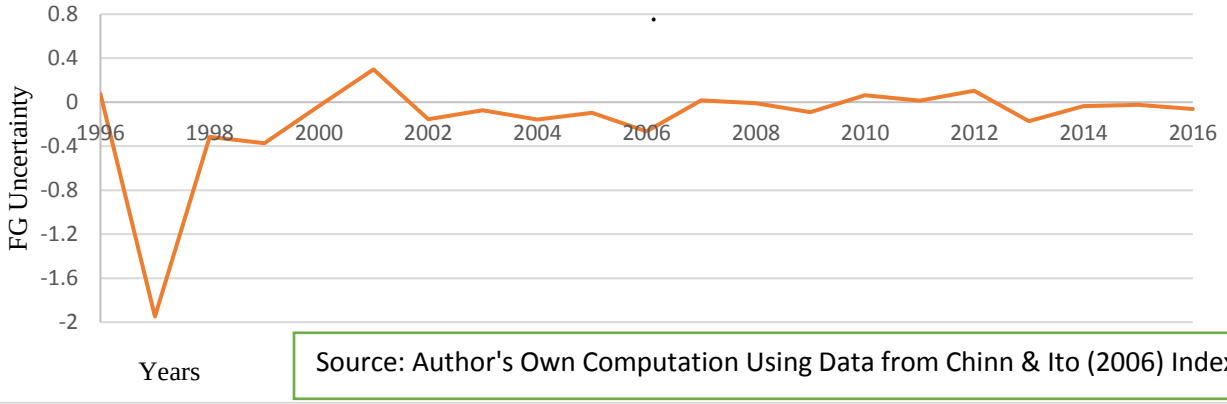
After 2007 FGU kept on increasing for consecutive year, as shown in graph above that FGU increased from 2008-2009, James et al. (2015) described that till 2007 capital inflows remained high in European countries and high level of financial integration is achieved, but after 2007 integration has decreased and was marked with volatility. The rate of financial integration remained low after GFC, there was slow growth in financial integration (Lund et al., 2013). Particularly afterward GFC most of the DMEs imposed restrictions on foreign banks. Thus bank lending and portfolio inflows decreased in DMEs, especially the European DMEs were highly effected (James et al., 2015). Although there was modest increase in financial inflows in UK, Canada and Australia, but on net the decrease in inflows outweighed the increase (Lund et al., 2013). Lund et al. (2013) explained that later in 2012 sharp decline in capital flows is witnessed. In 2013 macro-economic situation became worse in EU, there was fear that countries might quit currency union. Due to this condition in EU, investor reduced the holding of foreign debts and bank's

function was also affected. There was huge capital outflow from European DMEs especially from UK (James et al., 2015). It is clearly depicted in graph that FGU amplified after 2012 and it peaked in year 2016.

3.6 Financial Globalization Uncertainty (FGU) in Emerging Market Economies (EMEs)

Section 3.6 illuminates trends in average level of Financial Globalization Uncertainty (FGU) in Emerging Market Economies (EMEs), below figure 3.6 shows the graph of average Financial Globalization Uncertainty (FGU) in Emerging Market Economies (EMEs) over period 1996 to 2016. Underneath graph illustrates that FGU stayed at low level in late 1990s, in the year 1997 a huge decline in it is realized. Although the fluctuations are also there in decade of 2000s, but when compared with Developed Market Economies (DMEs) these are less severe.

Figure 3.6: Depicting Graph of Average Financial Globalization Uncertainty (FGU) in Emerging Market Economies (EMEs) Over Period 1996 to 2016.



Source: Author's Own Computation Using Data from Chinn & Ito (2006) Index

Figure 3.6 Graph of Average FG Uncertainty in Emerging Market Economies

Financial Globalization Uncertainty (FGU) presented a declining trend after 1996 because the financial globalization rapidity increased in the era of 90s, Asian EMEs

enjoyed huge amount of capital inflows so these economies adopted liberalized policies in 1996. Mexican economy had crisis in 1995, debate started among policy makers that either this was a result of liberalization. It was concluded that capital account openness has nothing to do with crisis, furthermore in an attempt to enhance stability further openness is required. Both Mexico and Korea removed restrictions and liberalized their capital accounts in 1997 (OECD, 2011). Due to these factors the FGU decreased sharply in 1997, but after 1997 it again appeared to be increasing. Unfortunately, these economies were unable to sustain this level of certainty in FG. Due to Asian financial crisis restrictions were imposed and low degree of integration is seen, hence after 1997 FGU increased in EMEs (Chinn & Ito, 2008).

With the beginning of 2000s decade, again uncertainty predominated. As in EMEs volatility in Foreign Direct Investment (FDI) outflows added to the uncertainty in capital account, from year 2001 to 2010 FDI volatility continued to be excessive. Countries that had high volatile outflows were Chile, Hungary and Malaysia (Eichengreen et al., 2018).

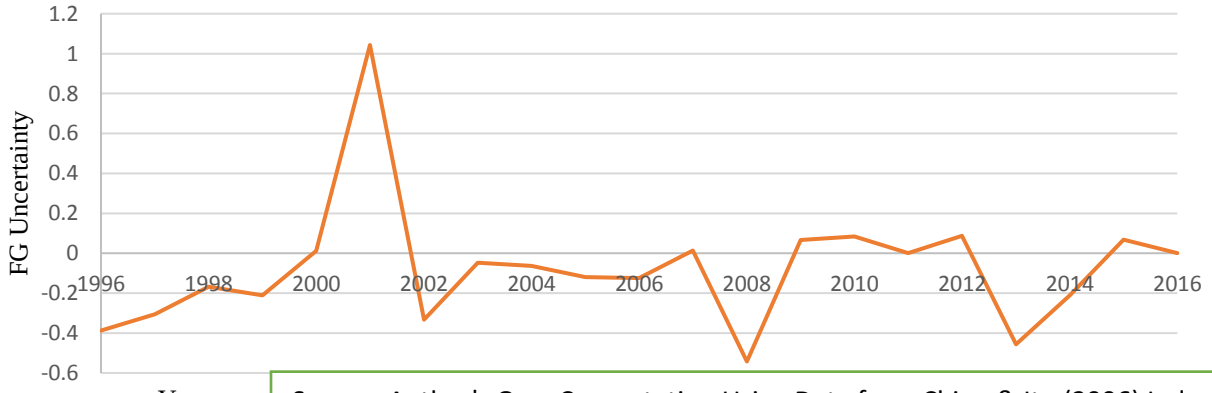
Above graph demonstrates that there was a slight decline in FGU in year 2008, prevalence of Global Financial Crisis (GFC) disturbed the EMEs but when compared with DMEs these markets were less influenced. Fatefully in year 2008, when world was suffering from crisis and uncertainty, South Africa was able to attract more FDI and other investment inflows. One of the reason could be the domestic investors preferred to invest in there and transfer their capital back to home country. Thus in 2008 EMEs on average were not affected much, in fact there was little reduction in FGU (Beer, 2015). Low interest rates in EMEs attracted foreign capital and FGU became less. James et al. (2015) argued that although capital flows increased in EMEs but still year 2009 volatility is witnessed.

As indicated in graph the FGU become less in 2009 but due to volatile inflows it increased in subsequent year 2010. After 2012 foreign inflows increase in EMEs, and reached to pre-crisis period (Lund et al., 2013). In 2013 volatile capital flows from DMEs benefited EMEs, as cross boarder lending and portfolio inflows increased in India, Indonesia, Malaysia and China (James et al., 2015). It is shown in graph above that in 2013 the uncertainty exhibited a decreasing trend, this still lingered less even in year 2016.

3.7 Financial Globalization Uncertainty (FGU) in Frontier Market Economies (FMEs)

Section 3.7 deals with trend analysis of average level of Financial Globalization Uncertainty (FGU) in Frontier Market Economies (FMEs), figure 3.7 represents the graph of average Financial Globalization Uncertainty (FGU) in Frontier Market Economies (FMEs) over period 1996 to 2016. Graphs shows that in late 1990s i.e. from 1996 to 1999 FGU was lower. But with the commencement of new decade of 2000s it started to increase, and year 2001 is marked with highest level of uncertainty, as FGU peaked in the same year.

Figure 3.7: Depicting Graph of Average Financial Globalization Uncertainty (FGU) in Frontier Market Economies (FMEs) Over Period 1996 to 2016.



Source: Author's Own Computation Using Data from Chinn & Ito (2006) Index

Figure 3.7 Graph of Average FG Uncertainty in Frontier Market Economies

FGU in 1996 existed to be reasonably low, and it sustained a lower value till 1999. In early 1980s Latin American countries faced debt issue, as a reaction to it restricted policies were opted therefor Financial Globalization remained less. But in early 1990s, in line with policies of like other market economies FMEs also liberalized their capital account. The 1996 was the year in which the whole world moved towards Financial Globalization, hence uncertainty in all three kinds of markets remained reasonably low due to new paradigm of liberalized policies (Chinn & Ito, 2008).

When FMEs entered in 2000s decade, the FGU began to surge. Average level of FGU peaked in year 2001, this was the year when financial crisis occurred in Argentina. This crisis proved to be a turning point in reverting the liberalized policies. Regulations on capital account were imposed to decrease volatility in ER and to overcome the crisis. (Romero, 2012). Lebanon being the outlier raised the average level of uncertainty in FMEs, according to Gibson et al. (2006) Lebanon economy was functioning below its potential in year 2000-2002. Soon countries realized the importance of integration, Slovenia joined EU in 2004 and become financially integrated, hence FGU marked to be low in same year.

In year 2009 FGU was low in these economies, in 2008 when world was suffering from Global Financial Crisis (GFC), FMEs in this year enjoyed low average of FGU. Argentina experienced high level of inflows and no restrictions were imposed by authorities, in fact foreign investors were encouraged to participate, foreign investors owning domestic companies were given special treatment (Government of Argentina, 2013). In 2008 GFC just like Argentina, in Slovenia also no regulations were enforced and inflows were stimulated. It was the beginning of 2009 when Slovenia faced after effects of

GFC, but in 2008 it adored liberalization (OECD, 2012). Thus due to this idiosyncrasy these two countries the average FGU lessened in FMEs. Again in 2013 due to low level of restrictions on capital account and less fluctuations in ER, FGU was less. After 2013, FGU indicated increasing trend because other inflows and FDI remained reasonably low, the EMEs competitors had diverted attention of European investors (OECD, 2012).

3.8 Conclusion

Graphical analysis illustrates that variables exhibit different trends in case of each market economy, for instance financial development is high in both developed and emerging market economies, but unfortunately in frontier market economies it never goes beyond the limit of 64%. Thus, it can be said that level of financial development depends upon the particular type of market economy. Similarly, the financial globalization uncertainty also varies in these markets, rapid and large fluctuations are witnessed in developed and frontier market economies, but in merging market economies these fluctuations are relatively less. Furthermore, the effect of Global Financial Crisis (GFC) is not adverse in each market, GFC adversely affected developed but not emerging and frontier market economies equally.

Chapter 4

Methodology and Data

4.1 Introduction

Current chapter explains the estimation technique undertaken, sample size and type of data utilized in this study. Chapter is segmented into distinctive sections, section 4.2 presents the theoretical underpinnings of the model. Section 4.3 aims at the outlining the projected relationship among Financial Development (FD) and other independent variables. Empirical model to be estimated is constructed in section 4.4, section 4.5 describes the variables and sources of data. Whereas the final section 4.6 elucidates the empirical methodology which current study utilizes.

4.2 Theoretical Framework

There is vast literature concerning the Financial Development (FD) and Economic Growth (EG) relation, for instance Schumpeter (1911) has done a pioneering work in highlighting the importance of finance in determining the EG. Schumpeter (1911) characterizes innovation as a key factor in enriching EG. Similarly he discusses that financial markets aid in finance provision for innovations to the entrepreneurs thereby augmenting the growth. In line with this, Goldsmith (1969) corresponds that financial organization and financial customs adopted in a country shapes the path of Economic Growth (EG) along with its pace. King & Levine (1993) test Schumpeter (1911) theory empirically by taking the data of 84 countries, results drawn are in line with theory that financial development and growth are related. In a similar way, Levine (1997) ascertains that Financial

Development (FD) positively influences the growth. Whereas Lucas (1988) indicates that role of financial matters in determining EG is over stressed.

A new debate in financial development and growth relation surfaces with the work of Robinson (1952) who states that growth leads to financial development. According to her growth is followed by financial development. Patrick (1966) defines a two way relation between financial development and growth. He argues that in the phase of rapid growth, demand for funds by leading sector increases this need for excess financing cannot be fulfilled by their internal profits. Therefore industries demand excess finance from financial institutions, in this way growth expands the role of financial institution and increase financial development. On the other hand, these institutions get finance from individual's saver or lagging sector's entrepreneurs, and supply it to leading industries thereby further expanding industrial output and growth. Patrick (1966) mentions that in the early stages the demand channel dominates whereas later the supplying-fund channel dominates, he also supports the idea of Schumpeter (1911) the supply of innovative finance.

With the work of McKinnon (1973) and Shaw (1973), the financial repression and financial development literature gain importance and provide key foundation for analysis of financial markets. McKinnon (1973) explains that ceiling on rate of interest and high collateral requirement policies[10] make it difficult for the individuals to engage in rural sector for acquiring credit from banks and later, using it for any productive purpose. Increase efficacy of bank's lending is a major factor in enriching the size of monetary

[10] These interventionist policies by government are termed as financial repression.

system and in dwindling financial repression (McKinnon, 1973). Therefore McKinnon (1973) advocates a liberalized financial sector for financial as well as economic growth. Sharing the same view, Gibson & Tsakalos (1994) argue that financial market work efficiently and development of new markets takes place in the presence of liberalized financial setup. McKinnon and Shaw Hypothesis utters that low interest rates are detrimental to financial development and growth. As savings are positive function of interest rate, therefore high deposit rates incentivize savers and cause an increase in bank deposits. Furthermore, extra savings due to high rate insure the availability of loanable funds for investment project. On the other hand, low interest rate discourages savings, and also lowers the availability of loanable funds thereby dwindling the growth and financial development. According to this hypothesis, Financial Liberalization (FL) is crucial for development effective financial sector, interest rate encourage savings, and there exist complementarity between money demand and investment. Bouzid (2012) illustrates the McKinnon complimentary hypothesis by constructing theoretical framework which is as follows,

$$\frac{M}{P} = f\left(Y, \frac{1}{Y}, (d - \Pi^e)\right) \qquad (1)$$

The above equation is of demand function, Y shows real income, $\frac{1}{Y}$ is investment, and $d - \Pi^e$ is real interest rate.

- $\frac{\partial(\frac{M}{P})}{\partial(Y)} > 0,$ this partial derivative shows the money demand for transaction. An increase in income generates a strong monetary detention.

- $\frac{\partial(\frac{M}{P})}{\partial(\frac{1}{Y})} > 0,$ this partial derivative expresses the money which is demanded for investment. The investment increases the monetary saving. As a consequence of FL policy the increase in investment rates are transmitted into savings.
- $\frac{\partial(\frac{M}{P})}{\partial(d-\Pi^e)} > 0,$ this depicts that a positive interest rate increases the money demand.

In line with McKinnon complimentary hypothesis the investment function is written as follows:

$$\frac{1}{Y} = f\ (r, (d - \Pi^e) \qquad (2)$$

Here r is average rate of physical capital

Where $\frac{\partial(\frac{1}{Y})}{\partial(r)} > 0$, $\frac{\partial(\frac{1}{Y})}{\partial(d-\Pi^e)} > 0$

Taking the partial derivatives, $\frac{\partial\left(\frac{M}{P}\right)}{\partial\left(\frac{1}{Y}\right)} > 0$ (3)

$$\frac{\partial(\frac{1}{Y})}{\partial(d-\Pi^e)} > 0 \qquad (4)$$

The above equations (3) and (4) proposes that it's not the cost of capital which restrain investment rather it is limited by availability of finance. Whenever real deposit rates rise, individuals save more, availability of loanable funds increases. Elimination of

financial constrains directly increase the financial development, which then upturns the investment.

Shaw considers savings increase due to growth and interest rate, underneath equations (5) and (6) depict Shaw's perspective.

$$I = I(r) \qquad \frac{\partial(I)}{\partial(r)} > 0 \qquad (5)$$

$$S = S(r, g) \qquad \frac{\partial(S)}{\partial(r)} > 0; \quad \frac{\partial(g)}{\partial(r)} > 0 \qquad (6)$$

According to Shaw "*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"* (Shaw, 1973).

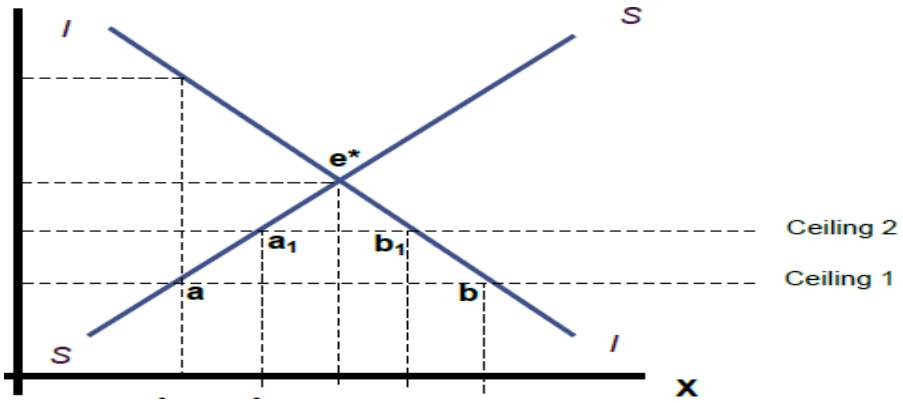


Figure 4.1: A Depiction of McKinnon and Shaw Hypothesis

Figure 4.1 McKinnon and Shaw Hypothesis

Scenario 1: When government imposes a ceiling on deposit rate then banks cannot make profit and saving rate remain low.

Scenario 2: When there is less restriction on interest rate, then saving will increase. The difference between the current rate and previous rate (on which government had imposed ceilings) would be the bank's profit. Because then the banks will charge high lending rate too. In this way high rate will give rise to efficient financial system, in which bank's profitability would be higher as well as the saving are high.

Scenario 3: In which rates are completely liberalized, banks will charge very high lending rates and savers also enjoy high deposit rates.

In a nutshell, the hypothesis shows that a liberalized financial system will increase the efficiency of financial sector. This hypothesis gained importance in financial market's analysis. Emergence of financial crisis evoked a great response by researchers regarding the investigation of financial markets as well as in devising relevant policy strategies. Consequently, the literature concerning the role of financial globalization in influencing the financial development acquire much attentions. Given, that financial globalization is essential for efficient functioning of domestic financial sector [Fischer (1998), Rogoff (1998), Schmulker (2004) and Kose *et al.* (2009)]. On the contrary, a different strand of literature suggests that financial globalization amplifies the uncertainty and is detrimental for financial and growth [Bhagwati (1998), Stiglitz (2000) and Li & Zhou (2015)]. Therefore, financial globalization uncertainty become a crucial factor in the scrutiny of financial development. Asongu (2017) for the first time empirically scrutinizes this new aspect of financial globalization uncertainty being a function of financial development in economic literature as explained in detail in section 4.4 of this chapter. Succeeding the establishment of this relationship is the calculation of financial globalization uncertainty, different methods have been employed by researchers. In concordance with the study of

Asongu (2017), a detailed methodology regarding computation of financial globalization uncertainty is given in section 4.6.1 of this chapter.

4.3 Expected Relationships

4.3.1 Financial Globalization Uncertainty (FGU) and Financial Development (FD)

In the presence of uncertainty in financial inflows, domestic countries do not rely solely on external sector for development of financial sector. In order to cope with global uncertainty, nations built up strong financial institution setup for financial development (Asongu et al., 2017). In this way uncertainty is effective in enhancing financial development. Furthermore, financial globalization enhances entry of foreign banks. In the period of financial instability, domestic depositors transfer their deposits to the domestically operated foreign institutions, instead of shifting them abroad. Consequently, in time of crisis volatility in capital outflows reduces, and in this situation international financial institutions play their active role to lessen the existing instability in financial sector (Agenor, 2003).

Contrary to it, other group of economists disagree that uncertainty increase financial development. According to Massa & Velde (2008) financial globalization uncertainty negatively affect financial development via banking channel. Foreign banks operate in other countries, in the phase of crisis these banks withdraw their credit from other country and shift it towards the countries in which their parent branch is located. Therefore, with objective of offsetting loses in their domestic country, foreign banks give rise to crisis and cause collapse of financial sector in other countries (Massa & Velde, 2008). Similarly, Motelle & Biekpe (2014) validate the hypothesis that Financial Openness causes domestic financial instability.

Thus, the economic theory is vague regarding financial globalization uncertainty and financial development relation, the relationship can be positive or negative.

4.3.2 Inflation and Financial Development

Huybens & Smith (1999) construct a theoretical model to explain the impact of inflation on financial development. By the theoretical model the inverse relation between inflation and financial development become detectable. They state that after reaching at certain level inflation worsens the real sector and financial sector development. High level of inflation can detriments the financial development, as consequence of inflation domestic economic agent find it invaluable to keep savings in domestic currency. As inflation lessens the value of domestic currency so as an alternative investors find it profitable to invest in physical capital, which shrinks the financial development (Shahbaz *et al*., 2017). Contrary to it, English (1999) contends that due to increase in inflation transaction services are substituted for real balance by households. In this way, a rise in inflation causes an increase in the size of financial sector.

Empirical studies undertaken by [Chin & Ito (2002), Asongu (2014), Asongu & Moor (2015) and Asongu *et al.* (2017)] also find a negative linkage among inflation and financial development. On the other hand English (1999) sees a positive relation between inflation and size of financial sector.

Inflation and financial development can be either way, but majority of studies detect a negative relationship. Thus in the light of economic theory and vast empirical literature significant and negative relation is expected.

4.3.3 Institutions Quality and Financial Development

In economic literature there are many hypothesis that highlight the role of institutions for enhancing financial development. Acemoglu et al. (2001) describe endowment hypothesis, this hypothesis explains that strong Institutional Quality improves financial development by directly increasing the income of individuals. Moreover he enlightens that Institutional Quality differ in each country and reason behind is alterations in colony experiences faced by different countries.

La Porta et al. (1997) put forward the law and finance hypothesis, according to it cross-country differences in financial development are due to distinction in rights given to investors. Lack of protection to investors and lack of laws diminish capital markets in countries.

Simultaneous openness hypothesis is given by Rajan & Zingales (2003), it utters that liberalization policies can be mark as beneficial in improving the level of financial development. Rent seeking behavior of incumbents hinders the financial development, but owing to liberalization no one can make use of political power to influence financial development.

Likewise, the empirical studies by Naceur et al. (2008) and Ito (2006) underline the existence of relationship between these two variables.

In line with economic theories and empirical findings discussed above a positive and significant relation is expected between Institutional Quality and financial development.

4.3.4 Growth and Financial Development

Higher level of growth directly increases the incomes of individuals, thus added income enables household to invest in financial assets like long term bonds, and this indirectly escalates financial development (Okeke & Acha, 2017). In line with Okeke & Acha (2017), Greenwood & Jovanovic (1990) also support the argument that growth lead to financial development. They explain the theoretical underpinning of growth and financial development. Growth is advantageous in providing opportunity to entities for initiating a new investment project and increasing their income. In stage of high growth, people earn more incomes therefore the saving rates and bank deposits also rise. In this way growth has direct and positive impact on financial development (Greenwood & Jovanovic, 1990).

Empirical inquiries by past researchers manifest a positive and significant relation between growth and financial development, for instance studies accomplished by [Chinn and Ito (2002), Ozkok (2010) and Asongu (2014)] initiate a positive relationship among both variable.

Economic theory concerning growth and financial development demonstrates a positive link between both, thus considering theoretical and empirical underpinnings significant and positive relationship is expected.

4.3.5 Investment and Financial Development

Investment is crucial to financial development, increase in capital formation helps in improving the credit of domestic banks. Policies that are designed to encourage investors escalates economic as well as financial development (Mbulawa, 2015). Lu et al. (2007) indicate the presence of bidirectional relationship between investment and financial

development. Financial development help in mobilizing saving to undertake investment project, likewise the banking sector flourishes by capital formation (Lu et al., 2007).

Greenwood & Jovanovic (1990) construct a theoretical model to elucidate that adequate amount of investment contributes in yielding high returns. These returns are beneficial in rising the incomes of individuals. As income begin to rise, then the financial structure becomes widen (Greenwood & Jovanovic, 1990).

In the light of this discussion this study assumes that ample amount of investment is crucial for amplifying financial development.

4.3.6 Trade Openness and Financial Development

Newbery & Stiglitz (1984) acknowledge tie between trade openness and financial development. They maintain that future financial markets cannot develop in the absence of free trade. Similarly, Rajan & Zingales (2003) also agree that free trade increases financial development. They debate that interest groups or monopolies in any economy tend trade openness hinder the entry of new firms in order trade openness achieve this object interest groups suppress the financial development. Free trade is advantageous as it destabilizes the monopoly power and thus increases the financial development.

Ho & Lyke (2018) empirically analyze the short and long run effects of free trade on financial development. In low income countries positive and significant relation emerges whereas for middle income countries relation appears trade openness be insignificant. It is argued that low income countries face more market deformations therefore trade openness prove beneficial in removing such distortions. Contrary trade openness Ho & Lyke (2018), Zhang et al. (2015) empirically establish a negative relation

between financial development and trade openness. It retains that trade openness increases financial efficiency in more globalized countries but overall it shrinks the level of development.

On the basis of economic theory and empirical evidence mentioned above, it can be alleged that relation between financial development and trade openness is vague some of the empirical studies find a positive relation and others a negative.

4.4 Empirical Model

In empirical studies, model specification is mandatory, therefore this study forms an empirical model based on the theoretical foundations stated in section 4.2. To fulfill the objectives of study a model is adapted from studies of Asongu *et al.* (2017), Chinn & Ito (2002) and Huang (2010), and new model is constructed which is underneath.

$$FD_{it} = \beta_0 + \beta_1 FD_{it-1} + \beta_2 FGU_{it} + \beta_3 GDPG_{it} + \beta_4 TO_{it} + \beta_5 INF_{it} + \beta_6 INV_{it} + \beta_7 IQ_{it} + \mu_{it} \quad (7)$$

Here FD is the financial development, FGU is financial globalization uncertainty, GDPG is GDP growth, INF is inflation, INV is investment, whereas IQ is the institutional quality and μ is the random error term.

Financial Development (FD) is the dependent variable, it's not only the single indicator rather it is an index of FD. Lagged dependent variable is added in the model showing that FD depends upon its past value. The core independent variable in the above model is Financial Globalization Uncertainty (FGU), along with this variable FD depends upon other independent variables (GDPG, TO, INF, INV and IQ) present in the model.

T= 1996, 1997, 1998……..… 2016.

i shows cross-sectional units and it differs in each sample. For DME's model i is 23, in EME's model i is 22, whereas in FME's i is 20. In the full sample (which is formed by merging three markets into one sample) the number are cross-sectional units are 65.

4.5 Data Sources and Variable Construction

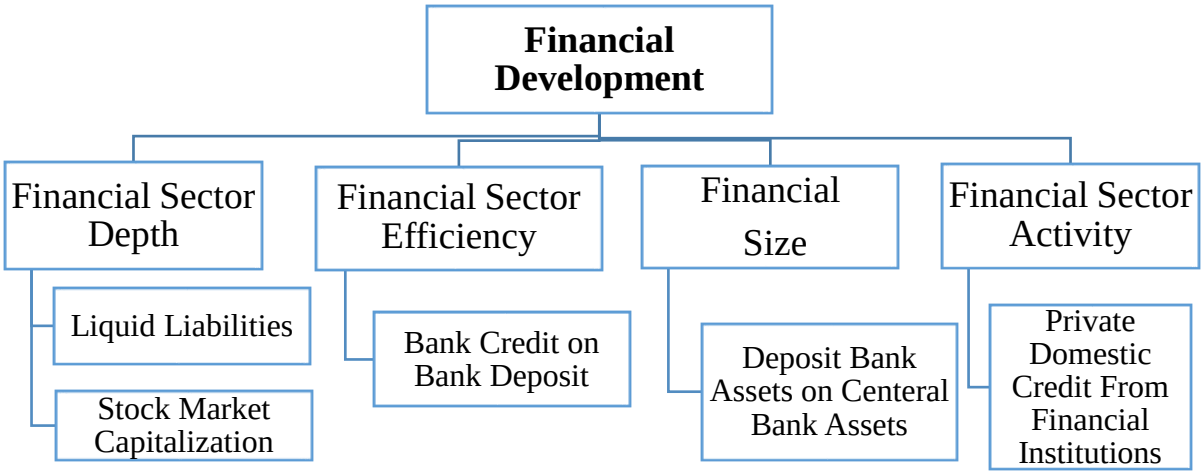
4.5.1 Data and Sample

This study employs secondary data for panel of countries. Panel data includes observations of different cross-sectional acquired over numerous periods. Along with different cross sectional units the time period cover by study includes from year 1992 to year 2016. Data of 23 developed markets, 22 emerging markets and 20 frontier markets economies is utilized. This division is based upon MSCI market frame which depends on following criteria i.e. Economic Growth, size and liquidity requirements and market accessibility criteria. MSCI stands for Morgan Stanley Capital International, this organization publishes research based indexes. Data for indicators of Financial Development is collected from Financial Development and Structure Database of World Bank, similarly the capital account openness is taken as an indicator of FG, data is collected from Chinn and Ito (2002).Whereas data for control variables is taken from world development indicators.

4.5.2 Financial Development

Financial Development (FD) is a multi-dimensional phenomenon, therefore keeping in view the nature of FD distinct measures are used by the past researchers. [Chinn & Ito (2002), law (2009), Ozkok (2010), Garcia (2012), Ho & lyke (2018)] use liquid liabilities and private sector credit to gauge FD. Similarly researchers like [Chinn & Ito (2002), Ito (2006), Ozkok (2010), Ayadi et al. (2013) and Garcia (2012)] employ stock market capitalization for measuring FD.

Figure 4.2: Depicting the measure of Financial Development



Source: Financial Structure Database of World Bank (FSDB)

Figure 4.2: Measures of Financial Development

Table 4.1: Variables, Data Source, Description and References			
Variables	**Data Source**	**Description**	**References**
De Jure Measure of Financial Development	Chinn & Ito (2002).	Index measure capital account openness, by using data of multiple export-proceeds, exchange rate, and restrictions. Its value ranges from 0 to 1, value close to 1 indicates high degree of openness and vice versa,	Chinn & Ito (2002), Ito (2006) and Ayadi et al. (2013).
Liquid Liabilities	Financial Development and Structure Database of World Bank (2019)	Ratio of liquid liabilities to GDP.	Chinn & Ito (2002), law (2009), Ozkok (2010), Garcia (2012), Asongou et al.(2017) and Ho & lyke(2018).
Stock Market Capitalization	Financial Development and Structure Database of World Bank (2019)	Stock Market Capitalization to GDP (%).	Chinn & Ito (2002), Ito (2006), Ozkok (2010), Garcia (2012) and Ayadi et al. (2013).
Bank Credit on Bank Deposit	Financial Development and Structure Database	Private credit by deposit money banks as a share of demand, time and	Asongou et al. (2017).

	of World Bank (2019)	saving deposits in deposit money banks.	
Deposit Bank Assets on Central Bank Assets	Financial Development and Structure Database of World Bank (2019)	Ratio of deposit money bank claims on domestic nonfinancial real sector to the sum of deposit money bank and Central Bank claims on domestic nonfinancial real sector.	Asongou et al. (2017).
Private Domestic Credit from Financial Institutions	Financial Development and Structure Database of World Bank (2019)	Private credit by deposit money banks and other financial institutions to GDP.	Ito (2006), law (2009), Baum et al. (2017) and Asongou et al., (2017).
Inflation	World Development Indicators (2019)	Inflation, consumer prices (as % of GDP).	Chinn & Ito (2002), Ito (2006), Naceur et al. (2008), Vodova (2012), Khalfaoui (2015), Asongu et al. (2017), Baum et al. (2017) and Ho & lyke (2018).
GDP	World Development Indicators (2019)	GDP growth (annual %)	Ozkok (2010), Vodova (2012), Zhang et al. (2015) Shahbaz et al.

			(2017), and Baum et al. (2017).
Investment	World Development Indicators (2019)	Gross Fixed Capital Formation as % of GDP	Khalfaoui (2015), Mbulawa (2015) and Shabbir et al. (2018).
Trade Openness	World Development Indicators (2019)	Trade is sum of export and imports measured as share of GDP.	law (2009), Ozkok (2010), Zhang et al. (2015) and Baum et al. (2017).
Institutional Quality	International Count Risk Guide (2019)	It is proxied by variable control of corruption. It assess corruption in political system, this index ranges from 0 to 6. Highest value is assigned to countries that have high control for corruption.	Ito (2006) and Naceur et al. (2008).

Table 4.1: Variables, Data Source, Description and References

4.5.3 Financial Globalization

Measure of Financial Globalization (FG) can be divided into two categories i.e. de-jure and de-facto measures, de-jure measures usually measure globalization by the amount of restrictions on capital account imposed by domestic policy makers. It can take form of binary variables or gradual scale variable. Whereas de-facto measures are the outcome of de-jure components as they gauge the ratio of capital flows to GDP (Beck et al., 2013). This study uses the de-jure measure of Chinn & Ito (2002) for quantifying FG. Furthermore, as a robustness check this study utilizes an alternative de-facto measure of FG, this index is constructed by Cordella & Rojas (2017).

Figure 4.3: Depicting measures of Financial Globalization used in Literature

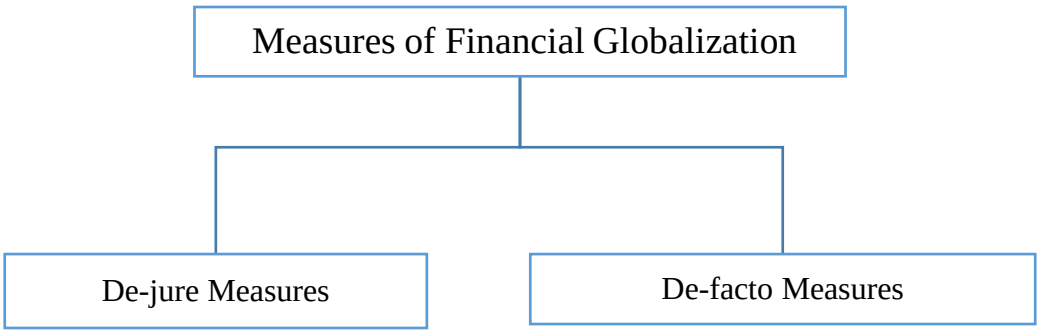


Figure 4.3: Measures of Financial Globalization

Chinn & Ito (2002) construct an Index by using the first principal of component of multiple exchange rate, capital controls and export proceeds. Ito (2006) and Ayadi et al.

(2013) take into consideration same index for gauging FG which based on de-jure measures. Asongu et al. (2017) measured FG with financial account openness (FDI), while Garcia (2012) takes two variables i.e. private capital flow and interest rate integration for FG. Frost & Tilburg (2014) use Gross international capital flows as a proxy of FG. Ozkok (2010) measure FG by applying PCA on variables like FDI inflow, FPI inflow and debt issue.

4.5.3a De Jure Measure of Financial Globalization

This index is constructed by Chinn & Ito (2002), and they derived data for this from AREAER[11], it contains the binary data on restrictions. This index measures Financial Globalization (FG) therefore this data is reversed i.e. it takes value 1 where there are no restrictions otherwise 0. And it relies upon four measures $K_{1t,}$ K_{2t}, K_{3t} and K_{4t}. K_{1t} represents the multiple exchange rate, K_{2t} measures the requirement of surrender export proceeds whereas K_{3t} and K_{4t} measures the restriction on current and capital account.

Five years moving window is constructed for K_{3t} capital account restriction variable which is as follows:

$$\text{SHARE } K_{3t} = \frac{K_{3,t} + K_{3,t-1} + K_{3,t-2} + K_{3,t-3} + K_{3,t-4}}{5} \qquad (7)$$

Index = First standardized principal component of K_{1t} , K_{2t}, SHARE K_{3t} and K_{4t}

[11] IMF's categorical enumeration, reported in Annual Report on Exchange Arrangements and Exchange Restrictions. AREAER gives information related to restrictions on external accounts for countries.

4.5.3. b De Facto Measure of Financial Globalization

The de-facto measure is created by using the data of stock return. Cordella & Rojas (2017). This index of Financial Globalization (FG) is used which is based upon methodology of Pukthuong & Roll (2009). Underneath is the brief description of methodology followed by them for computation of index.

$$r_{it} = \alpha + \beta' GF_t + \mu_{it} \qquad (8)$$

GF_t is the global factor, covariance matrix of daily return in dollar denomination is calculated, the principal component of these return is computed, and the first component is retained which is global factor. The equation (8) represents the model in which returns are regressed over the global factor. This computation consists of two steps, in first step global factor is calculated by using the data of stock markets starting from year 2006, this year is chosen because it lies in middle of sample. The basket includes developed as well as developing countries, so the global factor reveals the dynamics of both types of economies. While the second step regresses each country's stock return over the global factor. In this second step the R^2 of the regression is calculated by using the first components only, this provides each country-year measure of financial globalization.

$$FGI = \frac{UFGI}{1+\delta_t (1-UFGI)} \qquad (9)$$

UFGI is the unrestricted financial globalization index, it is computed by using the only one global factor. FGI is the corrected index, it is corrected for heteroscedasticity.

$$\delta_t = \frac{\sigma^2 (GF)_\tau \quad - 1}{\sigma^2 (GF)_0} \qquad (10)$$

In the above equation (10), $(GF)_\tau$ is showing the global factor's variance in year τ, whereas $(GF)_0$ shows it for base year.

4.6 Empirical Methodology

In case of panel data the broadly use technique of empirical enquiry is Generalized Method of Moments (GMM). Endogeneity is term as two ways relationship i.e. both dependent and independent affect each other. Application of Ordinary Least Square (OLS) in such situation may lead to bias results in estimation because OLS is based upon the assumption of no endogeneity. In case of endogeneity the use of GMM becomes viable. Kose *et al.* (2009) argue that the countries with strong financial sector are less affected by Financial Globalization Uncertainty (FGU). As Financial Globalization (FG) boost development of financial sector in a similar manner Financial Development (FD) can provide a way to cope with crisis link with globalization (Kose *et al.*, 2009). On the other hand, FD is also influenced by FGU. FG increase the role of foreign banks in domestic country, with the emergence of FGU these banks take out their financial capital and invest it in their own countries in order to compensate loses there. In this way FGU decreases the domestic FD (Massa & Velde, 2008). Therefore, it is clear from this discussion that there is two way relationship between FGU and FD. In the given context the best suited technique is GMM, henceforth this study makes use of GMM for empirical scrutiny.

Arellano & Bond (1991) suggest the application of difference GMM for panel estimation, this propose method became widespread. This method allows for adding the

lag of variables that are to be used as instruments. Shortcoming of this method are highlighted later, one of the noticeable limitation of this model is, that it might create small sample bias. Bond et al. (2001) argue that systematic GMM can eradicate this problem therefore the use of systematic GMM is recommended. System GMM and difference GMM differs from each other, because in difference GMM only internal instruments are used. The lag instruments can cause the problem of weak instruments (Huang, 2010). Whereas system GMM allows for adding the external instruments. Dependent variable is not only affected by the lagged variable, there are also some of the external variables which influence dependent variable. Therefore, the system GMM permits enclosure of lag of instrumented variable along with external instruments (Roodman, 2006).

Roodman (2006) mentions that system GMM process is dynamic as the lag of dependent variable is added. Similarly this method enables one to increase efficiency of estimates by adding more instruments. Internal instruments include the lag of instrumented variable, estimators permit to add external instruments as well. The general model for system GMM could be written as,

$$y_{it} = \alpha y_{it-1} + X'_{it}\beta + \varepsilon_{it} \quad (11)$$

$$\varepsilon_{it} = \mu_i + v_{it} \quad (12)$$

$$E[\mu_i] = E[v_{it}] = E[\mu_i v_{it}] = 0 \quad (13)$$

The disturbance term has two components fixed effect μ_i and idiosyncratic shock v_{it}. Above equation (11) can be written as

$$\Delta y_{it} = (\alpha - 1)y_{it-1} + X'_{it}\beta + \varepsilon_{it} \quad (14)$$

Roodman (2006) contends that two step GMM has lower standard error and biasedness when compared with one step GMM. Roodman (2009) thus adopts two step approach and extends the model of Arellano and Bover (1995) by implementing forward orthogonal deviation, so the given technique is subject to implementation in this study contrary to difference GMM. The benefit of adopting this two-step method is that it also considers the heteroscedasticity. Asongu et al. (2017) also espouse method of Roodman (2009), instead of difference GMM this study will also incorporate the two step procedure.

Econometric equation in two step procedure of system GMM could be written as,

$$FD_{it} = \sigma_0 + \sigma_1 FD_{it-\tau} + \sigma_2 FGU_{it} + \sum \delta_h W_{hit-\tau} + \eta_i + \in_t + \varepsilon_{it} \quad (15)$$

$$FD_{it} - FD_{it-\tau} = \sigma_0 + \sigma_1 (FD_{it-\tau} - FD_{it-2\tau}) + \sigma_2 (FGU_{it} - FGU_{it-\tau}) + \sum \delta_h (W_{hit-\tau} - W_{hit-2\tau}) + (\in_t - \in_{t-\tau}) + \varepsilon_{it-\tau} \quad (16)$$

Where,

σ_0 is constant

FD_{it} = financial development across country i and period t (captures all dimensions i.e. depth, efficiency and activity)

FGU_{it} = financial globalization uncertainty

W = vector of control variables

τ = coefficient of auto-regression

η_i = country specific effect

$\in_t$ = time specific affect

ε_{it} = random error term.

4.6.1 Construction of Financial Development Index

This study measures financial development by taking into account diverse components gaging each possible dimension like financial sector depth, efficiency, size and activity. Therefore, in this study attempts are made to merge all the key components of financial development for constructing a composite index. Many past researchers, for instance [Ozkoko (2010), Adnan (2011), Lenka (2015) and Svirydzenka (2016)] apply Principal Component Analysis (PCA) to construct an index of financial development. Current study also employs the PCA technique for creating index.

PCA is the broadly used technique for combining the like variables to create a single index which capture each possible dimension. It uses orthogonal transformation in order to convert correlated variable into linear combination of uncorrelated variables (Karamizadeh et al., 2013). PCA has distinctive advantages as it reduces the dimensionality of large data sets while reducing the information loss. Similarly, it makes easy to interpretation the data (Jollife & Cadima, 2016). In this approach, the first component has the largest variance likewise second component comprises of second largest variance, and the last component has the smallest variance [Ozkok (2010) and Lenka (2015)]. Weights are assigned to each component for taking into account the relative importance of components.

$$\text{Index} = W_{J1}X_1 + W_{J2}X_2 + W_{J3}X_3 + \ldots\ldots + W_{JP}X_P \quad (17)$$

$$\text{Index} = \Sigma W_{JP}X_P \quad (18)$$

Where,

W_J = Weight on factor score coefficient

P = Number of variables

Following this methodology of [Ozkok (2010) and Lenka (2015)] index of financial development is created. This index takes into account depth, efficiency, size and activity of financial sector, all the variables written in section 4.5.1 of this are directed for construction of this index.

For the sample of developed market economies the eigenvalue of the first component is 2.57 and the proportion is 0.42. It means that 42% of the variations are explained by the first component. Therefore, the first component is retained and it is used to calculate the weighted index for developed market economies' sample.

The eigenvalue of the first component for the emerging market economies is 3.46 and the value of proportion is 0.57. It signify that 57% of variations are due the first component. Hence, in this sample also the first component is used for the computation of index.

Likewise, the eigenvalues of first component in the set of frontier market economies' sample depict a high value of 3.13 units. The first component shows the proportion of 0.57 units demonstrating that 57% of the variations are being explained by the first component only.

The component of the full sample also gives a high eigenvalue of 3.25 units, its proportion is 0.54. The 54% of the variations are being explained by the firs principal component in full sample also.

In each market economies' sample the first principal component shows the highest eigenvalue and proportion. Therefore, this study utilize the first principal to construct an index of financial development.

4.6.2 Computing Financial Globalization Uncertainty

For computing uncertainty usually the Generalized Autoregressive Conditional Heteroskedasticity (GARCH) approach is extensively used in economic literature. Kangoye (2013) discusses that GARCH is suitable technique for computing uncertainty where the data is of high frequency i.e. monthly or quarterly. Hence in case of low frequency data use of autoregressive is suggested. The current study utilizes annual data therefore it uses an alternate technique to quantify uncertainty.

[Lensink & Morrisey (2000), Kangoye (2013) and Asongu (2017)] suggest two step procedures for the calculation of uncertainty, hence based on work of these past researchers this study also adopts two step procedure. The first step involves the estimation of the forecasting equation. Equation could be autoregressive of order one or two using AIC criteria and it also encompasses time trend. The second step involves the calculation of standard deviation of residuals from forecasting equation.[12] Underneath equation depicts the forecasting equation of first order autoregressive also encompassing time trend.

$$FG_{it} = \alpha + \beta FG_{it-1} + kT + v_{it} \quad (19)$$

[12] This is also termed as computation RMSE of forecasting equation.

Where

FG_{it}=financial globalization across different countries and time period

α = constant of equation

β = lag one parameter

T = time trend

v_{it} = forecast error across different countries and periods.

For computing uncertainty study uses the first order autoregressive and computes time-dynamic standard errors. Similarly, by following methodology of Asongu et al. (2017) the process uses the four year moving window. If the uncertainty is computed over long run by using data averages then the short run or business cycle effects are mitigated which are essential in measurement of uncertainty. Therefore, an additional advantage of using time dynamic standard error is that short-run or business cycle effects are not mitigated and it represents a true depiction of uncertainty (Asongu et al., 2017).

Chapter 5

Results and Discussions

5.1 Introduction

This chapter aims at reporting and discussing the results obtained after empirical scrutiny. Chapter is segmented into four different sections which are 5.2, 5.3, 5.4 and 5.5. Section 5.2 shows the descriptive statistics for developed, emerging and frontier market economies. Second section 5.3 displays and interprets empirical results of developed, emerging and frontier market economies. This section is further segmented into two sub sections 5.3.1 and 5.3.2. In section 5.3.1 the results of each variables are interpret for developed, emerging and frontier markets whereas section 5.3.2 deals with interpretation of outcomes of diagnostic tests. The fourth section 5.4 aims at narrating the empirical findings of full sample, the full sample is created by merging all three sub-samples. In addition to it, results of alternative measure of financial globalization uncertainty too are explained in this section. The final is section 5.5, in this section the whole chapter is concluded.

5.2 Descriptive Statistics

Underneath table 5.2 shows the descriptive statistics of variables in developed (DMEs), emerging (EMEs) and frontier market economies (FMEs). Mean, Standard Deviations (SD), minimum (min) and maximum (max) value of each variable is written in the table.

Table 5.2: Depicts the Descriptive Statistics of Variables

Descriptive Statistics of Variables Used in DMEs					Descriptive Statistics of Variables Used in EMEs				Descriptive Statistics of Variables Used in FMEs			
Variable	**Mean**	**SD**	**Min**	**Max**	**Mean**	**SD**	**Min**	**Max**	**Mean**	**SD**	**Min**	**Max**
FD_{it}	102.5	28.0	46.3	204	63.08	28.1	21.5	177.4	64.6	36.1	22.9	207
FGU_{it}	0.02	0.18	-0.50	1.07	-0.15	1.78	-35.4	7.51	-0.07	1.4	-10.5	25.0
TO_{it}	100.1	86.7	18.3	442	73.5	42.5	15.6	220.4	89.5	37.5	20.7	191.8
$GDPG_{it}$	2.3	2.7	-8.2	25.5	4.4	3.7	-13.1	26.1	4.2	3.6	-14.8	17.3
INF_{it}	1.7	1.5	-4.4	11.2	6.9	10.3	-4.8	85.7	6.2	10.2	-3.7	154.7
INV_{it}	22.4	3.3	14.7	38.4	23.5	6.2	12.4	45.5	23.5	5.2	10.6	40.5
IQ_{it}	4.4	0.90	2	6	2.4	0.83	1	5	2.4	0.76	0.5	5

Source: Author's Own Computation Using Stata 13.

In developed market economies, the mean value of financial development is higher i.e. 102 units and standard deviation is less. This high mean value and comparatively less standard deviations depict that developed market maintain relatively high amount of financial development. Similarly, the deviations in financial globalization uncertainty are low, its only 0.18 in developed market's sample. The maximum value of financial globalization is also lower than other two market economies. This demonstrates that less vulnerability assist developed countries to sustain a high average value of financial development.

Emerging market economies have less mean value of financial development and more deviations from the mean exist. Deviations from mean are less in this sample compared to frontier markets sample. Financial development has 28.1 units of deviation for emerging markets whereas for frontier market economies it has 36 units of deviations.

The maximum value of financial globalization uncertainty for emerging economies is 7.5 units and for frontier market economies its 25 units. Standard deviations in financial globalization uncertainty are also higher for both emerging and frontier market.

It is apparent from the above table that in developed economies the average value of financial development is more and there are less deviations both in financial globalization uncertainty and financial development. On the other hand, other two types of market economies i.e. emerging and frontier have more deviations in financial globalization uncertainty and less average value of financial development.

The mean value of inflation is only 1.7 units and deviations in it are 1.5 unit for developed markets. Contrary to it, the mean value of financial development is much higher. So, it can be said that a lower level of inflation helped developed market economies in achieving a higher amount of financial development.

The emerging and frontier market economies maintain approximately equal amount of inflation i.e. 6 units, similarly inflation's variable also shows large deviations of 10 units from its mean. Likewise both these types of market economies comprise equal and smaller level of financial development compared to developed market economies.

Developed market economies contain sound quality of institutions, the descriptive statistics is showing more average value of institutions quality for developed economies sample. Its minimum value is 2 units and maximum value is 6, the deviations from mean are also less. A significant amount of financial development and quality of institutions is evidencing that sound quality of institutions are necessary for enriching the financial development.

Average value of institutional quality in emerging market countries is just 2.4 units, the minimum value is 1 unit, and the maximum value is 5 units. Frontier market economies acquire 2.4 units average value of institutional quality, its minimum value is 0.5 and maximum value is 5.

Investment has average value of 22 units for developed market economies, standard deviation is less its 3.3 units. Emerging and frontier markets maintain a slightly high value of investment i.e. 23 units compared to developed economies' sample. But the deviations from mean are more in emerging and frontier, the former has deviations of 6 units whereas later contain deviation of 5 units.

Economic growth shows less deviations from mean in developed economies but it but surprisingly the mean value is small, its only 2.7 units. This less deviation is showing that more values are actually close to average value. Other two market type economies have high average of growth but hold more deviations from this mean value. Frost & Tilburg (2014) finds average value as 3.5 units for sample of advanced and emerging countries. Emerging market economies have deviation of 3.6 units whereas frontier market economies consist deviations of 3.7 unit. Asongou et al. (2017) find 4.68 mean value of economic growth for sample of least developing countries.

Trade openness variable for developed market sample grasps an average value of 100 units, but deviation from this average value is also extreme i.e. 89 units. In developed market sample more of values lie beyond the average value. Law & Habibullah (2009) obtains mean value of trade openness for developed and emerging market sample as 64 units. Mean value of this variable for emerging and frontier market is not that much high, on the other hand standard deviation is also less. The former has average value of 73 unit

with standard deviations of 42 units, whereas later has average of 89 units with standard deviations of 37 units. Law & Demetriades (2004) and Baltagi et al. (2008) got mean value of trade openness variable as 66.6 and 63.6 units for emerging markets.

5.3 The Panel Data Regression Results

This section reports the result obtained after empirical examination, the table 5.2 reports the result of first three model, Model I consists of sample of developed market economies (DMEs), Model II reports the result of emerging market economies (EMEs) sample, whereas the empirical findings of frontier market economies (FMEs) are reported in the Model III.

Table 5.3: Impact of Financial globalization Uncertainty on Financial development for DMEs, EMEs and FMEs Markets

Panel A: Estimation Results: Dependent Variable FD			
Regressors	**Model I**	**Model II**	**Model III**
$FD_{i, t-1}$	0.927***	0.784***	0.907***
	(0.009)	(0.078)	(0.027)
FGU_{it}	-0.411***	-0.756**	-0.415**
	(1.258)	(2.963)	(1.839)
$GDPG_{it}$	0.420**	1.597***	0.792***
	(0.155)	(0.517)	(0.169)
TO_{it}	-0.001	0.083*	0.093**
	(0.005)	(0.047)	(0.038)
INF_{it}	-0.801**	-0.283**	-0.353***
	(0.336)	(0.115)	(0.075)
INV_{it}	1.239***	1.714***	0.383**
	(0.185)	(0.494)	(0.180)
IQ_{it}	0.166***	0.691**	0.283*
	(0.577)	(3.427)	(1.556)
Time Dummies	Yes	Yes	Yes
Panel B : Diagnostic Test			
Hansen Test	19.14	8.23	8.31
P-Value	0.448	0.511	0.504
AR(1)	3.18***	-2.69***	-2.03**
P-Value	0.001	0.007	0.043
AR(2)	1.38	-1.46	0.57
P-Value	0.169	0.144	0.569

Note: 2-Step Dynamic GMM estimation technique is used. The values in the parenthesis are showing the standard errors, and *, **, *** illustrates the significance level at 10%, 5% and 1% respectively.

Table 5.3: Panel Regression (Dynamic GMM) Results

The Table 5.3 depicts that all three models for developed, emerging and frontier markets. The model is dynamic panel as lag of dependent variable is added, which signifies financial development depends upon its past value. Two step GMM is applied which deals with endogeneity present in dynamic panel model. Result of Model I shows that one unit increase in value of lagged financial development will increase the current value of financial development by 0.92 units, and its co-efficient is significant at 1% significance

level. This result indicates that lagged dependent variable is persistent, and it positively influences the dependent variable. This finding is in line Law & Habibullah (2009) and Baltagi et al. (2008) who also find the persistence in this relationship and concluded that dynamic GMM is applicable technique. Similarly, Model II for emerging markets and Model III for frontier markets, result reveal that previous financial development effect current financial development positively and significantly in both markets. This persistence is also confirmed by previous studies Law & Saini (2008) and Mbulawa (2015).

Empirical outcomes of Model I show that financial development decreases due to financial globalization uncertainty, co-efficient of FGU is negative and significant at 1% significance level. It indicates that financial globalization uncertainty decreases the financial sector development of developed market economies. It shows one unit increase in financial globalization uncertainty will decrease the financial development by 0.411 units. Azkunga et al. (2013) maintain that financial give rise to deregulated banking system, which in turn amplifies the problem of moral hazards and creates uncertainty. In this way, the financial globalization produces uncertainty which is transmitted to other countries as well. Lukas (2013) analyzes the impact of financial on the domestic sector for the sample of developed and developing countries, he concludes that financial globalization due to its uncertain nature causes the banking and currency crisis, and this outcome is more prominent for developed market economies. In accordance with Lukas (2013), Carp (2014) considers financial as a factor behind volatile capital flows. He argues that this volatility problem exists both in developed and emerging market economies. The global instabilities and imbalances produce macroeconomic uncertainty in domestic country. Financial interconnections among countries contribute in transmission of instabilities, hence these

volatile financial flows are unfavorable for financial development (Carp, 2014). For emerging market sign of the variable does not alter in second model, it shows one unit increase in financial globalization uncertainty decreases the financial development by 0.75 units, this result is acceptable at 5% level of significance. This result is comparable to the theoretical underpinnings of Mishkin (2007) who expresses that financial globalization is not always beneficial for emerging market economies as it transmits the financial crisis, he describes it by quoting examples of Mexico and other East Asian emerging market economies. After deciding for liberalized policies and financial globalization, banking sector of these countries increase the lending rates without taking into account the moral hazard and adverse selection criteria. Excess amount of risky loans are given without considering the credit worthiness of borrowers, as a result bad debts are created. So, the banking sector suffer losses, due to excess loans the net capital of bank declines. Both the depositors and lenders bear loses, the artificial boom in financial sector created by financial globalization turned into crash of banking sector due to financial globalization uncertainty. To attract the foreign loans banks amplify the interest rate which further aggravate domestic financial crisis lead to collapse of banks and stock markets (Mishkin, 2007). Keeping in view these facts, Mishkin (2007) views financial globalization uncertainty as damaging for the banking sector of emerging market economies. Reddy (2006) shares the similar view that external imbalances which are created in developed countries disturb the financial markets of emerging countries. According to Pagliari & Hannan (2017) capital flows are more volatile in emerging market economies, they explore the US MP stance as the key factor behind the volatile capital flows to emerging market economies. They conclude that volatility of flows correlate with the stability of financial markets, high

volatility results in instable financial sector. For frontier markets in Model III coefficient is explaining that one unit increase in financial globalization uncertainty will lessens the financial development by 0.41 units, and this estimate is significant at 5% significance level. According to IMF (2008) the frontier market economies are likely to more suffer due to uncertain flow, in the slow down period of business cycle the financial outflows take place from such economies. These volatile flows decelerate the development of financial markets and credit expansion. Baba & Baba (2013) have alike views that financial globalization uncertainty is harmful for financial sector of frontier market economies. According to them, the developed market economies grip more financial resources, thus frontier market economies take assistance of these countries for accumulation of debt. Therefore, frontier market economies sustain a certain level of growth and financial development by taking debt. But the problem arises when financial globalization uncertainty emerges, as a consequence of which debt inflows and role of MNCs become lessen. In this way, financial globalization uncertainty decreases the growth of financial sector in views that financial globalization uncertainty is harmful for financial sector of frontier (Baba & Baba, 2013). The empirical estimates of three models depict that financial globalization uncertainty not only affects the developed but it also spreads to emerging and Frontier market economies. Findings prove that financial globalization uncertainty is a cause of inefficient financial sector (Mishkin, 2007).

Growth is crucial for uplifting the financial sector of a country, the empirical findings of Model I confirm that GDP growth assists in enhancing financial development. It implies that one unit increase in GDP growth will increase the financial development by 0.42 units, and this is significant at 5% level. The views of Robinson (1952) and

Greenwood & Jovanovic (1990) that growth leads to financial development support the finding of this model. According to demand-following response hypothesis the development of real sector increase the demand for financial services that are met with the introduction of new financial institutions (Adusei, 2013). In line with theoretical justification the empirical findings of past researchers are also in conformity with findings. Badeeb & Lean (2017) empirically validate the existence of positive relation between financial development and GDP growth, according to them high growth increases the demand of financial services. Similarly different researchers [Law & Habibullah (2009), Naceur et al. (2014), Le et al. (2015), Almarzoki et al. (2017) and Shahbaz et al. (2018)] verify this relationship. In accordance with the model I, in the second model GDP growth sustains to be positive and significant. Hence, the findings establish that just like developed market economies the GDP growth is equally important for financial sector development of emerging market economies. Result reveals that one unit increase in GDP growth will increase the financial development by 1.5 units, and it's co-efficient is significant at 1% level of significance. This result is in conformity with outcomes of [Law & Demetriades (2004), Law (2009) and Seetanah et al. (2011)] that growth positively effects financial development. Role of GDP growth in the development of financial sector cannot be ignored, empirical outcomes of model III depict that in frontier market economies GDP growth has a vital contribution in nurturing the financial development. One unit expansion in GDP growth will improve financial development by 0.79 units, this estimate is valid at 1% significance level. High growth ensures resource utilization for productive purpose, to fulfill this excess demand banking sector plays an active role for providing financial resources, in this way growth indirectly uplifts financial development (Mbulawa, 2015).

Empirical results of [Takyi & Obeng (2013) and David et al. (2014)] confirm that growth and financial development have a positive relation in frontier market economies.

Trade openness variable remains insignificant in model I, it is showing that trade openness does not influence the financial sector of developed market economies. The reason may be the developing countries face more market distortions therefore trade openness proves to be beneficial in removing distortions and enhancing financial development (Ho & Lyke, 2018). Contrary to it, Ho & Lyke (2018) find insignificant impact of trade openness on financial developed for developed countries as these countries face less distortions therefore trade openness has no significantly impact on financial development. In the case of developed market economies model the trade openness variable gives insignificant results specifying that financial development of developed market economies does not depends upon trade openness. But in the current model this variable is significant, and is showing the financial development enhancing effect. Outcome demonstrates that in emerging market economies trade inflows have a major role in intensifying the level of financial development, co-efficient depicts one unit increase in trade openness will increase the financial development by 0.08 units, and this result is acceptable at 10% significance level. Economic theory is in line with empirical findings, as Fundamentalist view of market contends that trade openness enhances investment and financial development (Beder, 2009). Mishkin (2007) theoretically justifies that trade flows are not controversial like financial flows, trade flows have adequate advantages for the emerging market economies. Furthermore, this result is in harmony with the empirical findings of Baltagi et al. (2008) who find that openness is a major determinant of financial development in developing economies. Law & Demetriades (2004) empirically advocate

that when emerging countries open up their borders for trade flows then it also enriches financial development. This is confirmed by empirical study for 9 Eastern European countries and evidences that trade openness has positive impact on financial development (Bayar et al., 2017). Similarly, Law & Saini (2008) and Seetanah et al. (2011) empirically ascertain that trade openness increases financial development of emerging market economies. Trade openness variable performs positive and significant in third model, its co-efficient illustrates one unit increase in trade openness helps in promoting financial development by 0.09 units, and this co-efficient is significant at 5% level of significance. Gazdar & Cherif (2014) empirically endorse the existence of positive relationship between trade openness and financial development. In the same way Takyi & Obeng (2013) investigate the impact of trade openness on financial development for frontier economy, they attain the co-efficient of trade openness as positive and significant.

Inflation adversely affect financial development, findings of the Model I confirm this notion, in case of developed market economies one unit increase in inflation will decrease the financial development by 0.8 units, and its co-efficient is significant at 5% level. Economic theory explains that inflation reduces the money balance, according to Mundell (1965) and Tobin (1965) as a consequence of high inflation people decrease the money holding and increase the holding of other assets. By analyzing the current situation of inflation, economic agents form high inflationary expectations. In this way capital outflows take place and investors become discourage. Furthermore, as inflation erodes the value of money so depositors decrease the holding of financial assets. This lead to decrease in deposit rates and the supply of credit for investment project (Naceur et al., 2014). Theoretical findings of Huybens & Smith (1999) justify the present result that inflation has

adverse implications for financial development. Likewise, sign of co-efficient is in accordance with findings of [Naceur et al. (2014), Almarzoki et al. (2017) and Badeeb & Lean (2017)], they empirically prove that inflation is a threat to financial development.

Inflation in an economy is also a major determinant of financial development, inflation worsens the development of financial sector irrespective of the market type, as empirical findings illustrate that inflation is negative and significant both for developed and emerging market economies model. In model II co-efficient shows that one unit increase in inflation will decline the financial development by 0.28 units, result is significant at 5% significance level. This result of Model II is indorsing the theoretical justification of Stockman (1981), who argues that in the scenario of high inflation in economy it is un-wise to hold liquidity. As it erodes the real value of money, thus by reducing the supply of productive financial sources inflation contracts financial development. Inflation demotes financial development this concept holds for frontier market economies also, as the co-efficient of inflation is negative indicating that one unit increase in inflation will decrease the financial development by 0.35 units, this result is significant at 5% significance level. According to David et al. (2014) high inflation may indicates that there is macroeconomic uncertainty in the country, so it discourages the finance al development. David et al. (2014) empirically estimate the impact of inflation on financial development for the sample of 34 African frontier markets. Their outcomes are in accordance with that of current study which his inflation diminishes financial development in frontier market economies.

Investment in an economy reflects fruitful repercussions in elevating financial development. Result verifies that investment plays a significant role in increasing financial

development. One unit increase in investment will increase the financial development by 1.2 units, its coefficient is significant at 1% significance level. Economic theory supports the empirical finding of study, as market efficiency hypothesis postulate that share prices reflect the relevant market information, therefore investors adopt rational behavior for making investment. So, this rational behavior of investors escalates investment in stock share and makes financial markets efficient (Al-Hajieh, 2016). Theoretical model of Greenwood & Jovanovic (1990) also support this finding of Model I that a positive linkage between investment and financial development exists. Furthermore, the empirical verdicts of Khalfaoui (2015) approve that investment increases financial development, he gathered data for 15 developed and 23 emerging countries, and found the co-efficient of investment to be positive and significant for the sample of both developed and emerging economies.

Investment plays a key role in improving financial development in emerging markets. The empirical findings of Model II are in line with the findings of previous model. One unit increase in investment will increase the financial development by 1.7 units, this co-efficient is significant at 1% level. Investment is crucial in determining the level of financial development in an economy, the investors are the one that demand financial services, and resultantly bank increase credit provision, in this way the banking system also flourishes (Seetanah et al., 2011). So, this empirical result is in line with economic theory and the empirical estimates of Seetanah et al. (2011) and Khalfaoui (2015). Variable of investment for frontier markets in third model is positive and significant, result is showing that one unit rise in investment will enhance financial development by 0.38 units, and this co-efficient is significant at 5% significance level. Improvement in inventories is very crucial for financial development, additionally investment in capital surges financial

development via increasing the domestic credit (Mbulawa, 2015). Mbulawa (2015) by applying dynamic GMM on the set of 11 African countries empirically approves that investment plays a vital role in augmenting the level of financial development in frontier markets.

In model I co-efficient of institutional quality indicates that one unit improvement in institutional quality will increase the financial development by 0.16 units, this is significant at 1% significance level. Economic theory validates the finding, as law and finance theory of La Porta et al. (1997) explains that strong legal setup in country assists in expanding financial development. High-quality institutions are not necessary for only the smooth functioning and organization of whole economy, but are also important for the functioning of other sectors as well. For instance the financial sector could not work properly without the better institutional quality. Mishkin (2007) enlighten that developed market economies have an up to the mark level of institutional quality, there is information symmetry due to functioning of institutions, and hence as a result of effective role of institution the financial markets grow rapidly. Additionally, it is a generally observation that economies with lower institutional quality have narrow capital markets, on the other hand firms can acquire external finance easily and grow faster in countries with sound institutional quality (Naceur et al., 2014). Empirical findings are also in line with the past researches that appropriate level of institutional quality helps in increasing financial development. Naceur et al. (2014) while analyzing the impact of institutional quality on financial development also obtain the co-efficient of institutional quality as positive and significant. Similarly, Law & Habibullah (2009) and Almarzoki et al. (2017) find the positive co-efficient of institutional quality for the sample of developed countries.

Institutional quality is obligatory for augmenting financial development, in the previous model institutional quality possess positive sign, its mean that sound institutional quality is complimentary for financial development both in developed and emerging market economies.in second model it depicts one unit improvement in institutional quality will expands the financial development by 0.69 units, this co-efficient is significant at 5% significance level. Gazdar & Cherif (2014) find that institutional quality is equally important in emerging and frontier markets. Their results demonstrate that institutional quality positively and significantly impacts the financial development. Good institutional quality is an indicator of stability, it encourages inflows and boosts the confidence of individuals to increase the banking deposits (Gazdar & Cherif, 2014). In the absence of sound institutional quality, the basic role of institutions which is to channel funds from depositors to investors will be ignored, hence it undermines the confidence of depositors (Law & Saini, 2008). Empirical results of Law (2009) are also in line with the current verdicts. In the third model the co-efficient of institutional quality displays that one unit surge in institutional quality will intensify financial development by 0.28 units at 10% significance level. Anayiotos & Toroyan (2009) find effect of institutional quality on each possible dimension of financial development for the set of Sub-Saharan countries. Their results are similar to findings of current study that institutional quality expands financial development in frontier economies. According to them institutional quality influences those variables more that measure depth and access to financial sector as compared to variable measuring profitability of this sector (Anayiotos & Toroyan, 2009).

5.3.1 Diagnostic Tests

Diagnostic test are important in dynamic GMM modeling and the outcomes are written in table above. There are two important tests Hansen test and another test for checking serial correlation. Firstly, the instruments used in the model should be validity, it means that instruments should not relate with random error term. Secondly, series should not be autoregressive of order 2. The outcomes of these tests for all three models are explained underneath.

Hansen Test

Hansen is the test for checking the validity of the instruments used in the model, its null hypothesis is that instruments are valid. The null has to be accepted, if this null is rejected then it is an indicative that instruments used in the model are invalid (Gazdar & Cherif, 2014). It can be seen from table 5.5 that for model I the p-value of Hansen test is insignificant, it is 0.448 which implies that instruments are valid.

For the current Model II the p-value of Hansen is 0.511 which means the result is insignificant, and this study accepts the null hypothesis that instruments are valid is. Thus, with the validity of tests this study concludes that there is no such issue of instrument endogeneity or proliferation.

The p-value of Hansen test is 0.504 for third model, this insignificant value is an indicative of that all the instruments used in model are exogenous, and are uncorrelated with error term. Therefore, instruments for the model of frontier market are also valid.

Hence, the Hansen test for all the three models demonstrates that instruments are valid and are uncorrelated with the random error term.

AR (2) Test

After checking the validity of instruments, other decisive test in GMM is to find out whether there is an issue of serial correlation in the sample or not. GMM permits for autoregressive of order one, but autoregressive of order 2 is not acceptable. Null hypothesis of this test follows there is no serial correlation, an insignificant p-value is preferable because it indicates that there is no issue of serial correlation.

Result of Model I depicts that there is issue of AR (1) as p-value is highly significant i.e. 0.001. But for AR (2) p-value is insignificant its 0.169, therefore there is no serial correlation of order 2 in first model. For AR (2) we fail to reject the null hypothesis that implies there is no serial correlation.

In model II results of AR (1) are significant at 1%, indicating the issue of first order serial correlation. The p-value of AR (2) test is 0.144, this insignificant p-value is illuminating that null hypothesis of this test i.e. no serial correlation in the model should be accepted.

The AR test for third Model expresses that there is problem of AR (1) as its p-value is 0.04, therefore the null of no serial correlation is rejected at first order. In AR (2), the insignificant p-value of 0.569 is clearly depicting that there is no issue of serial correlation of second order.

Thus, the two important diagnostic tests are showing that there is no issue of instrument validity or serial correlation of order two in any model.

5.4 Robustness Check (with Full Sample and Alternative measure of financial globalization uncertainty)

Table 5.4 displays the empirical outcomes obtained by taking into account the full sample, in the model IV. The result that are reported are found by utilizing the de-jure measure of financial globalization uncertainty, whereas in the model V results are procured by taking into account the de-facto measure of financial globalization uncertainty.[13] In this sample the three distinct market economies are combined to give one sample.

[13] De-jure measures usually measure globalization by the amount of restrictions on capital account imposed by domestic policy makers. Whereas de-facto measures are the outcome of de-jure components as they gauge the ratio of capital flows to GDP.

Table 5.4: Result of Impact of financial Globalization Uncertainty on Financial Development for Full Sample

Panel A: Estimation Results: Dependent Variable Financial Development		
Regressors	**Model IV**	**Model V**
$FD_{i, t-1}$	0.943***	0.968***
	(0.021)	(0.018)
FGU_{it}	-0.124***	-0.364*
	(2.745)	(2.039)
$GDPG_{it}$	0.819**	0.720***
	(0.409)	(0.230)
TO_{it}	0.043*	0.037
	(0.026)	(0.042)
INF_{it}	-0.207*	-0.139**
	(0.109)	(0.063)
INV_{it}	0.501**	0.253**
	(0.206)	(0.098)
$itIQ_{it}$	0.297***	0.204***
	(0.611)	(0.470)
Time Dummies	Yes	Yes
Panel B : Diagnostic Test		
Hansen Test	15.92	15.30
P-Value	0.253	0.122
AR(1)	-2.66***	3.65***
P-Value	0.008	0.000
AR(2)	-1.64	1.62
P-Value	0.101	0.105

Note: 2-Step Dynamic GMM estimation technique is used. The values in the parenthesis are showing the standard errors, and *, **, *** illustrates the significance level at 10%, 5% and 1% respectively.

Table 5.4: Full Sample (Dynamic GMM) Results

Current study estimates the results by using the full sample, fourth model indicates the empirical findings by employing the de-jure measure of financial globalization uncertainty, whereas the second column reports the empirical outcomes of model taking de-facto measure of financial globalization uncertainty.

Both models are dynamic as the lagged dependent variable is taken as independent variable, verdicts show that in both the model co-efficient continues to be significant at 1% level, and the size of co-efficient remains closer to unity. This positive and significant co-efficient in both the model is confirming that dynamic GMM is the appropriate method.

Financial globalization uncertainty is negative in both models, in the fourth model Chin & Ito (2002) index is taken which the de-jure measure of financial globalization uncertainty , whereas the fifth model takes the de-facto measure constructed by Cordella & Rojas (2017). Surprisingly, financial globalization uncertainty arises with alike sign in both models, validating that financial globalization uncertainty will always decrease the financial development irrespective of the measure used. Cordella & Rojas (2017) also point out that both these measures are highly correlated, hence they are giving the similar results. Effect of financial globalization uncertainty persists same regardless of which measure (i.e. de-jure or de-facto) one is using to gauge the financial globalization uncertainty, only the co-efficient size and significance level differs. For fourth model co-efficient exhibits that one unit increase in financial globalization uncertainty will lowers financial development by 0.12 units, and it is significant at 1% significance level. While, in the fifth model the co-efficient is distinct, presenting that one unit intensification in financial globalization uncertainty will condenses financial development by 0.36 units and significant at 10% significance level.

Other variables GDP growth, investment and institutional quality's variables have positive sign in both the models. Co-efficient of institutional quality and investment is significant at 1% and 5% respectively in both the model. For these two variable only co-efficient size differs, the significance level and sign remains alike. GDP growth is positive

in both models, but its co-efficient is significant at 5% in fourth model, while its significance is 1% in fifth model. In the same way, the inflation is negative and significant in both models. This result is in conformity with outcomes of Le et al. (2015), in their full sample estimates co-efficient of GDP growth and institutional quality continue to be positive and significant.

The only contrasting result is in case of trade openness variable, in the fourth model the trade openness variable is significant and positive whereas in the fifth model the trade openness variable remain insignificant. Le et al. (2015) while exploring the determinants of financial development in cross-countries, conduct a robustness check with full sample, they also acquire a similar result with full sample i.e. insignificant trade openness variable.

Second panel displays the outcomes of two diagnostic tests which are Hansen and AR. P-value of Hansen in fourth model is 0.253 whereas in the fifth model it is 0.122. So, in both the models findings reveal that instruments are valid, they are uncorrelated with the error term.

According to AR test both the models are having issue of autocorrelation of order 1, p-value of AR (1) in fourth model is 0.008 whereas p-value for the fifth model is 0.000. In case of AR (2), p-value for both model is insignificant. P-value in fourth model is 0.101 whereas in fifth model it is 0.105. Insignificant p-values confirm that in both models null hypothesis of no serial correlation is accepted.

5.5 Conclusion

Financial globalization uncertainty negatively affects domestic financial development, this finding is identical for all three types of market i.e. developed, emerging and frontier. The

null hypothesis regarding financial globalization uncertainty and financial development is rejected. As a robustness check study uses alternative measure and this new measure gives result similar to previous one. Hence it can be said that financial globalization uncertainty undermines financial development and this relation prevails regardless of the gage used to capture the financial globalization uncertainty. Likewise, the high level of inflation also has adverse impact on financial development, in every model its co-efficient appears to be negative and significant. Whereas the other variables like investment, growth and institutional quality play a vital role in improving the financial development. This study relies upon the two important diagnostic tests of dynamic GMM which are Hansen and AR test. In each model Hansen test indicates that instruments employed are exogenous and valid. On the other hand the AR test for each model shows that there is AR (1) problem but issue of AR (2) does not exists in any of the model. Dynamic GMM allows for serial correlation of order one but that of order two is problematic.

Chapter 6

Conclusion and Policy Recommendation

6.1 Conclusion

With the implementation of liberalized policies, the countries become more financially globalized. These policies helped countries in developing a strong financial sector. But with the passage of time these financially globalized market economies bear the cost in form of financial globalization uncertainty. Afterward, the relation among financial globalization uncertainty and financial development gains importance in economic literature, there are number of theoretical studies by past researcher that evaluate this relationship. But when one looks at empirical studies, then it is not surprising that there is only negligible work in this context. Level of financial development differs in each market for instance the developed market economies have highest level of financial development, emerging market economies have lower financial development when compared with developed market whereas as compared to frontier market economies they are more financially developed. Frontier market economies maintain a lower level of financial development when compared with developed and emerging market economies. Keeping in view this feature of each market present study examines on the basis of market types.

This study analyzes the empirical relationship between financial globalization uncertainty and financial development for three distinct types of market economies over period 1996 to 2016. Dependent variable is financial development, this study constructs an index of financial development by merging distinct measures of financial development. PCA is the technique on which this study relies upon for constructing index of financial

development. The dynamic GMM is used for empirical examination of relationship between dependent and independent variable. This specific method is chosen because it resolves the issue of endogeneity bias too. The dynamic model is the one in which the lag of dependent variable is added, in all the models the lagged dependent variable appears to be positive and significant confirming that dynamic GMM is the appropriate technique. The empirical findings of GMM for each market economy are also compared. Furthermore, study conducts a robustness check by combining three markets into one sample. In this robustness check two additional models are estimated for full sample, the first model comprises of de-jure measure of financial globalization uncertainty, whereas study estimates the second model by using the de-facto of financial globalization uncertainty. Additionally, this study relies upon the two most important tests of GMM namely Hansen test and AR (2). Hansen tests the validity of instruments, in all the models this test confirms that instruments are valid and are uncorrelated with error term. Similarly, AR (2) holds that none of the model has serial correlation of order 2.

The co-efficient of financial globalization uncertainty appears negative for all three different types of market economies i.e. developed, emerging and frontier market economies. Findings confirm that uncertainty associated with financial globalization is detrimental to financial development, and this result holds in every type of market. In addition to it, the robustness check undertaken establishes that this relation sustains irrespective of the measure used to capture financial globalization uncertainty. Both De-jure and De-facto measures of financial globalization uncertainty produce the same empirical outcome that financial globalization uncertainty induces negative impact on financial development.

Trade openness variable shows a positive sign and remains significant for two types of markets economies i.e. emerging and frontier market economies. This study proves the openness hypothesis of Rajan & Zingales (2003) that free trade enhances financial development by eliminating the role of monopolies and interest groups. In the light of empirical analysis, it can be said that trade openness is the determinant of financial development in emerging and frontier market economies.

Institutional quality is very important for a sound domestic financial sector, according to findings a strong positive and significant relationship holds between institutional quality and financial development in all three market types which are developed, emerging, and frontier market economies. Adequate level institutional quality gives an indication to the foreign investor that there is stability in the country and therefore there rights would be protect. In this way institutional quality increases financial development via enhancing investment. Empirical findings of this study are in line with theoretical argument and concludes that institutional quality is a very crucial factor in augmenting the level of financial development, and this conclusion holds for all three market economies as well as for full sample.

Co-efficient of inflation depicts the negative sign for all the three types of market economies and remains highly significant, affirming that inflation is destructive for financial development.

Investment is another important determinant of financial development, capital accumulation directly impacts financial development via banking sector development. The empirical outcomes of the study prove that in each market developed, emerging, and frontier market economies investment assists in increasing financial development.

Therefore, it is concluded that investment plays a vital role in uplifting the domestic financial sector.

In a nutshell, empirical outcomes reveal that financial globalization uncertainty and inflation is unfavorable for financial development in all markets. The estimates are in line with openness hypothesis that it holds in case of emerging and frontier market economies. Furthermore, study concludes that other control variables i.e. institutional quality and investment are also fruitful for enriching financial development.

6.2 Policy Recommendations

Level of financial development differs in each market, so there is need to further boost the development of financial sector in each market with a special focus on financial development of emerging and frontier market economies. On the basis of empirical findings of this study, some recommendations are given that can be proved as helpful in enhancing the financial development, these recommendations are written underneath.

- Inflation is harmful for financial sector in all types of market, and high inflation is also indicative of instability. Therefore, inflation controlling policies can promote financial development.
- Financial globalization uncertainty diminishes the financial development, therefore countries too much dependent on external finance can be unfavorable for the development of domestic financial sector.
- Sound quality of institutions are essential for the nourishment of whole economy. None of the sectors of economy can work efficiently in the presence of ill institutional quality. The empirical outcomes also confirm that institutional quality is crucial for financial development in developed, emerging and frontier market

economies. Hence, it can be said that there is need to strengthen domestic institutions.

- Trade inflows play a vital role in increasing financial development of emerging and frontier market economies, so trade improving policies can enhance the financial development.
- Last but not the least, the capital formation is also very necessary empirical results verify that not only in developed but also in emerging and frontier market economies investment is crucial for financial development. Thus, the Investment encouraging polices enrich financial development

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Appendices

List of Countries Used In DME's Sample	
Australia	Japan
Austria	Netherland
Belgium	New Zealand
Canada	Norway
Denmark	Portugal
Finland	Singapore
France	Spain
Germany	Sweden
Hong Kong	Switzerland
Ireland	UK
Israel	US
Italy	

List of Countries Used In EME's Sample	
Brazil	Mexico
Chile	Pakistan
China	Peru
Colombia	Philippines
Czech Republic	Poland
Egypt	Qatar
Hungary	Russia
India	South Africa
Indonesia	Thailand
Korea	Turkey
Malaysia	United Arab Emirates

List of Countries Used In FME's Sample	
Argentina	Lithuania
Bahrain	Mauritius
Bangladesh	Morocco
Croatia	Nigeria
Estonia	Oman
Jordan	Romania
Kazakhstan	Slovenia
Kenya	Sri-Lanka
Kuwait	Tunisia
Lebanon	Vietnam

List of Countries Used In Full Sample	
Argentina	Lithuania
Australia	Japan
Austria	Netherland
Bahrain	Mauritius
Bangladesh	Morocco
Belgium	New Zealand
Brazil	Mexico
Canada	Norway
Chile	Pakistan
China	Peru
Colombia	Philippines
Croatia	Nigeria
Czech Republic	Poland
Denmark	Portugal
Egypt	Qatar
Estonia	Oman
Finland	Singapore

France	Spain
Germany	Sweden
Hong Kong	Switzerland
Hungary	Russia
India	South Africa
Indonesia	Thailand
Ireland	UK
Israel	US
Italy	Romania
Jordan	Slovenia
Kazakhstan	Sri-Lanka
Kenya	Turkey
Korea	Tunisia
Kuwait	Vietnam
Lebanon	United Arab Emirates
Malaysia	