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**IMPACT OF FOREIGN CAPITAL INFLOWS ON
ECONOMIC GROWTH IN THE PRESENCE OF
CURRENCY AND BANKING CRISES**



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UUM
Universiti Utara Malaysia

**DOCTOR OF PHILOSOPHY
UNIVERSITI UTARA MALAYSIA
January 2017**

**IMPACT OF FOREIGN CAPITAL INFLOWS ON ECONOMIC GROWTH IN
THE PRESENCE OF CURRENCY AND BANKING CRISES**



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**Thesis Submitted to
Othman Yeop Abdullah Graduate School of Business,
Universiti Utara Malaysia,
in Fulfillment of the Requirement for the Degree of Doctor of Philosophy**



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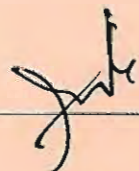
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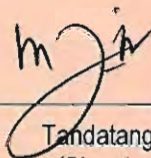
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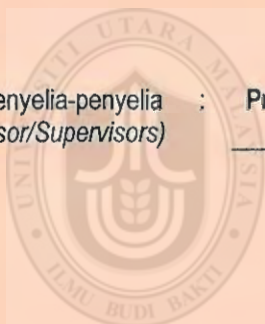
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(Title of the Thesis / Dissertation) of Currency and Banking Crises

Program Pengajian : Doctor of Philosophy (Industrial And Development Economics)
(Programme of Study)

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ABSTRACT

Foreign capital inflows (FCI) have been considered to be a key element in the process of economic globalization and integration of the world economy. However, the frequent occurrence of financial crises around the world has awakened the debate about the causes, consequences, impact and aftershocks of these crises. These sorts of financial crises are majorly occurring because of systemic banking crisis and currency crisis. These crises significantly influence the relationship between FCI and economic growth. The objective of this study is to identify the impact of foreign direct investment, foreign debt, workers' remittances and exports of goods and services on economic growth in high, upper middle, lower middle and low income countries. To attain the objective of this research, we collect a panel data of 96 countries and group them on the basis of different income levels. The final sample of this study consists of 10 low income countries, 23 lower middle income countries, 30 upper middle income countries and 33 high income countries. We employed fixed effect & random effect model estimation method to judge the desired relationship among variables. Fully modified ordinary least squares (FMOLS) has also been used to ensure the robustness of initial results. Results indicate the negative and significant influence of systemic banking and currency crisis. Results also indicate the positive and significant impact of all four types of FCI on economic growth in all income level countries except, remittances in low income countries and foreign debt in lower middle income. These two results show the negative impact on economic growth. Results also conclude that the banking and currency crisis are harmful for the relationship of foreign direct investment and economic growth in all income level countries. The study recommends several policy implications to improve the positive impact of foreign capital inflows on economic growth and reduce or control the negatively influence of systemic banking crisis and currency crisis on the relationship of foreign capital inflows and economic growth.

Keywords: systemic banking crisis, currency crisis, foreign capital inflows, economic growth

ABSTRAK

Aliran masuk modal telah dikatakan sebagai satu elemen penting dalam proses globalisasi dan integrasi ekonomi dunia. Bagaimanapun, krisis ekonomi yang sering berlaku diseluruh dunia telah menimbulkan perdebatan tentang sebab, akibat, impak dan kejutan selepas krisis ini. Krisis kewangan seperti ini kebanyakannya berlaku disebabkan krisis sistemik perbankan dan krisis mata wang. Krisis-krisis ini secara signifikan mempengaruhi perhubungan antara aliran masuk modal dan pertumbuhan ekonomi. Objektif kajian ini ialah untuk mengenalpasti kesan pelaburan luar langsung, hutang luar negara, kiriman wang pekerja, dan eksport barangan dan perkhidmatan keatas pertumbuhan ekonomi di negara-negara berpendapatan tinggi, pertengahan atas, pertengahan bawah dan rendah. Bagi mencapai objektif kajian, data panel dari 96 buah negara dikumpul dan di kelaskan mengikut tingkat pendapatan yang berbeza. Sampel terakhir mengandungi 10 negara berpendapatan rendah, 23 negara berpendapatan pertengahan bawah, 30 negara berpendapatan pertengahan atas dan 33 negara berpendapatan tinggi. Kaedah model penganggaran kesan tetap dan kesan rawak digunakan untk menentukan perhubungan yang diingini antara pembolehubah. Kaedah *Fully modified ordinary least squares (FMOLS)* juga digunakan bagi memastikan keputusan awal yang kukuh. Keputusan penganggaran menunjukkan kesan negatif dan signifikan krisis sistemik perbankan dan krisis matawang. Keputusan kajian juga menunjukkan kesan yang positif dan signifikan kesemua empat jenis aliran masuk modal keatas pertumbuhan ekonomi negara disemua tingkat pendapatan kecuali kiriman wang di negara berpendapatan rendah dan hutang luar negara di negara berpendapatan pertengahan bawah. Kedua-dua keputusan tersebut menunjukkan impak yang negatif ke atas pertumbuhan ekonomi. Keputusan juga menyimpulkan bahawa krisis perbankan dan krisis mata wang adalah memudaratkan kepada hubungan antara pelaburan luar langsung dan pertumbuhan ekonomi negara di semua tingkat pendapatan. Kajian ini mencadangkan beberapa implikasi ekonomi bagi memperbaiki impak positif aliran masuk modal ke atas pertumbuhan ekonomi dan mengurangkan atau mengawal pengaruh negatif krisis sistemik perbankan dan krisis matawang ke atas hubungan antara aliran masuk modal dan pertumbuhan ekonomi.

Kata kunci: krisis sistemik perbankan, krisis mata wang, aliran masuk modal, pertumbuhan ekonomi

ACKNOWLEDGEMENT

I thank Allah (SWT) who has made it possible for me to successfully complete my Doctor of Philosophy programme. I would also like to express my sincere appreciation to my supervisor Professor Dr. Mohd Zaini Abd Karim for his guidance towards the successful completion of this thesis. I equally thank him for his encouragement and kindness, all of which have made me to learn so much from him.

My gratitude goes to the members of the proposal defence committee, Professor Dr. Jauhari Dahalan and Associate Professor Dr. Hussin Abdullah for their useful contribution. My sincere appreciation goes to my family members: Syed Safir ul Hassan, Kauser Sultana, Syeda Kanwal Hassan, Kanza Khan, Syeda Javeria Hassan and Syed Ahmed Raza for their support and prayers, while they endured my continued absence during my study in Malaysia. I am indebted to them for their understanding, love and appreciations during my study.

I would like to register my appreciation to Dr. Wasim Qazi and Mr. Imtiaz Arif for their continuance support. I would also like to express my sincere appreciation to my first research mentor Mr. Syed Tehseen Jawaaid. I would also like to convey my great thanks to my colleagues and friends Arsalan Najmi, Muhammad Ali, Nida Shah, Amna Umer and Muhammad Asif Qureshi

Last but not least, my sincere appreciation goes out to all those involved in making this thesis a reality and those who have contributed towards this profound learning experience.

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LIST OF ABBREVIATIONS

FCI – Foreign Capital Inflows
EG – Economic Growth
FDI – Foreign Direct Investment
EXP – Exports of Goods and Services
ED – External Debt
EXD – External Debt
FD – Foreign Debt
REM – Workers’ Remittances
CRC – Currency Crises
BAC – Banking Crises
FC – Financial Crises
SSE – Secondary School Enrollment
INF – Inflation (Consumer Price Index)
GCE – Government Consumption Expenditure
DOC – Domestic Credit provided by financial sector
FE – Fixed Effect Model
RE – Random Effect Model
FMOLS – Fully Modified Ordinary Least Square
GNI – Gross National Income
MNCs – Multi National Corporations
GDP – Gross Domestic Product
IMF – International Monetary Funds
WDI – World Development Indicators
IPS – Im, Pesaran & Shin
PP - Phillips and Perron
ADF - Augmented Dickey Fuller
VIF - Variance Inflation factor
OLS - Ordinary Least Square
LI – Low Income
LMI – Lower Middle Income
UMI – Upper Middle Income
HI – High Income

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter shed some light on the background information related to the foreign capital inflows, systemic banking crisis, currency crisis and economic growth. This is followed by statement of problem where the influence of financial crises on the relationship of foreign capital inflows and economic is discussed. This chapter also presents the research questions, research objectives, justification and contribution of the study, scope of study, and the organization of the study.

1.2 Background of the Study

Foreign capital inflows play a significant role in the economic growth of both developing and developed countries (Raza & Jawaaid, 2014). Foreign capital has also been considered to be a key element in the process of economic globalization and integration of the world economy. The flows of capital have been welcomed, to complement domestic financial resources, as a development catalyst. The resource deficient economies relied heavily on foreign capital to achieve the objective of higher economic growth. The experience of the newly industrialized economies has firmed the belief that foreign capital could fill the resource gap of the capital-deficient economies. Foreign capital comprises the movement of financial resources from one economy to another. Foreign capital movements, in broader term, includes the borrowing of the governments by other governments, international financial institutions, short term or

long term lending from banks, investment in public and private bonds and equities, foreign direct investment to increase the productive capacity of the economy, aid, grants, exports of goods and services and the workers' remittances (Ali, 2014; Nkoro & KelvinUko, 2012).

Financial aid and grants are considered as a volatile or event based flow of foreign capital in the economies whereas, foreign direct investment, external debt, workers' remittances and exports of goods and services are considered as a more sustainable form of foreign capital inflows for developed and developing economies. International capital inflows have played an increasingly important role in the business cycles and economic activities of high-income, middle-income and low-income countries, especially since the 1970s and during episodes of financial crises. As a consequence, a large literature has grown, analyzing the cyclical behavior of capital inflows, mostly in emerging economies (Broner & Rigobon, 2004; Dornbusch, Goldfajn, Valdés, Edwards, & Bruno, 1995; G. Kaminsky, Lizondo, & Reinhart, 1998; Levchenko & Mauro, 2007; Mendoza, 2010). The existing literature has shown that foreign capital inflows are volatile and procyclical and declines during crisis times. These patterns have more intensity in the countries having different income levels and are also referred to "sudden stops" that refers to immense collapses in capital inflows that subsequently brings crises (Calvo, 1998; Calvo, Izquierdo, & Mejía, 2008; Cavallo & Frankel, 2008).

The recent wave of financial globalization experienced worldwide in recent decades was marked by a significant movement of flow of international capital between countries.

These assets are mainly in the form of loans, foreign direct investment (FDI), exports of goods and services (EXP) and remittances by workers. Countries that have opted for their financial sector liberalization were intended to enjoy the effects expected of such a policy. Indeed, by lifting restrictions on incoming and outgoing international capital movements, financial liberalization improves the sharing of risk, the effectiveness of an international allocation of capital and the promotion of financial development and economic growth. Foreign direct investment, workers remittances external debt and exports of goods and services are the main sources to collect the foreign capital inflows in the economy (Bhagwati, 1978; Ghazali, 2010; Hwang, 1998; Jin, 2000; Rachdi & Saidi, 2011; Paul M Romer, 1990). These all foreign capital inflows play a vital role in the economic development of an economy. Empirical studies conclude that these foreign inflows have positive as well as negative impact on economic development and results vary between different countries.

Debates on foreign direct investment, both in academia and in industries, majorly indicate that these flows to a suite of benefits for the host country. Foreign investment (FDI) are especially desired in developing countries that they are perceived as a factor of economic growth, a complement to domestic investment and a source of financing of the current account deficit. The main issue is not focused on the direct effects, but it is especially related to indirect effects that FDI can generate on the local economy in the form of technological externalities, the formation of human capital or have access to foreign markets which lead to long-term economic growth. FDI was reported as an essential source for the development of economy in the developing countries. FDI not

only resulted a reduction in unemployment by creating more employment opportunities but it also provide assistance by technology transfers, accelerates local investment, nurturing human capital and institutions in the host developing countries. The literature has identified two main theories on the basis of endogenous and exogenous growth. These theories have used in the existing literature in order to explain the relationship between FDI and economic growth.

Most of the innovations and new technologies are created in developed countries. For developing countries the only chance is to import this technology. Due to financial constraints, the formal transfer of technology seems to be too expensive for these countries. More viable options in terms of cost are international trade and FDI. Past studies suggests the FDI as a main vector for technology transfer. This approach is also justified by the fact that about 70% of expenditure on research and development in the world are concentrated in a small number of multinational corporations. The increased interest for the externalities of the FDI seems to be explained first of all by the increase in flows to the host country, with a peak in 2007 (according to the World Bank \$ 1.9 billion). Paradoxically, the majority of the stream are not oriented towards countries that have the greatest potential for profit. Statistics show that developed countries are capture the most of the FDI. However, in terms of growth of FDI, developing countries have begun to catch up with the shift.

The developing countries in general increased measures to attract foreign investors. FDI flows are particularly encouraged by developing countries as perceived as a universal

panacea and as a panacea to the problems of transition. The literature considers technology transfer associated with flows of capital as the essential part through which FDI contribute to economic development in the host country (Keller & Yeaple, 2009; Lipsey & Sjöholm, 2004). Thus, even without any contribution to the accumulation of capital, the FDI should stimulate technical progress through the transfer of technology and knowledge. If at the theoretical level, the arguments are obvious, the lack of solid empirical evidence remains surprising. Despite the relative consensus in the literature on the fact that foreign enterprises enjoy a direct transfer from the parent company, it has no clear indications about the effects driven at the level of local enterprises. It is theoretically possible that increased competition can compensate any indirect transfer of technology, leading to an overall impact neutral, or even negative.

Alfaro, Rodríguez-Clare, Hanson, and Bravo-Ortega (2004) and Keller and Yeaple (2009) argue that foreign direct investment should be considered as an alternative to export. In certain circumstances, multinationals prefer to serve the local market by creating their own subsidiaries on the spot instead of export, thus creating a horizontal FDI. If transport costs are high and the differences in cost of production are important, corporations can engage in vertical FDI, then export to foreign markets. Mentioned theoretical models take into account both horizontal and vertical FDI by modeling their implications at the level of the competitive structure of the sectors of the home country. Given that multinationals usually act in sectors characterized by an oligopolistic competition. Markusen and Venables (1999) argue that the penetration of FDI in local

market increases competition, which creates a sign of alarm for the local competitors especially in the developing economies.

More generally, most of the empirical studies discuss two main ideas. The first is that the vertical transfer of technology is more intense than the horizontal (Hanousek, Kočenda, & Maurel, 2011). The second idea concerns the role of the specific characteristics of firms, sectors or the host country. Mentioned factors, at the micro level, to influence the extent of externalities include: the size of the business, human capital, innovation efforts, the structure of the shareholding, technological intensity or orientation to export (Castellani & Zanfei, 2003; Javorcik & Spatareanu, 2008; Nicolini & Resmini, 2010).

Migrant workers' remittances are gradually becoming an important source of income for developing economies. Remittances are more important for economic growth because of its stable nature as compared to other external inflows of capital like loans, aids and FDI. The year of 2009 has reported more than \$440 billion of workers' remittances that was remitted using official channels.¹ The last two decades have shown a positive trend in the workers' remittances. Though in the last five years, FDI has fallen drastically due to recession in the economies of many developing countries but the workers' remittances are increasing continuously. Even some developing countries have more workers' remittances than their FDI. Remittances by the migrant workers have played a crucial role in nurturing the economic development in the respective countries (Siddique, Selvanathan, & Selvanathan, 2012). Remittances are said to be different from

¹ Source: World Bank (World Development Indicators) 2010

other foreign capital inflow like FDI, loans and aids because these are of stable nature relatively (Shahbaz, Aamir, & Butt, 2007). On the other hand, remittances are found to be in a positive trend when the host economy suffers a recession because of financial crisis, political conflicts or natural disasters etc. as expatriates remit more during crucial time for so that they can support their nations accordingly (Siddique et al., 2012).

Studies also argues empirically the positive relationship between workers' remittances and growth of the economy (Azam & Khan, 2011; Faini, 2006; Fayissa & Nsiah, 2010; Jongwanich, 2007). More precisely, workers' remittances are found to be significant source of increase in investments and consumption in host countries. Such increase is the major signal of development in the economy and both can be increased by efficient usage of workers' remittances. Workers' remittances have been proved to be a source of alleviating poverty in developing countries (Imai, Gaiha, & Kang, 2011; Jongwanich, 2007). Increase in workers' remittances also resulted in an increase in the private investments. In economic downturn and adversity, such remittances continue to increase and are found to be comparatively less volatile than FDI in those countries that have high marginal propensity to invest.

Since the developing countries are very much depending on such type of foreign capital inflows and therefore volatility in these inflows may affect the economic growth. These can be supposed to probably have significant consequences on growth in receiving countries. Remittances resulted in the accumulation of capital by direct increase in investor's funds and in the growth of physical and human capital of the host households.

On the contrary, it also increase credit merit of the local investor which results in decrease cost of capital in the country and when such cost decreases, consequences are increase in new investment borrowing. Simultaneously, remittances may expedite economic stability of the host country and make the economy less volatile accordingly. This subsequently resulted in reduction of risks in the host economy so that in order to increase investment (Jawaid & Raza, 2014).

The economic growth may have negative impact of capital inflows (remittances) in the host country which causes the decrease in labor force participation. This type of capital inflows may consider as transfer of income. Furthermore, this transfer of income may be beleaguered by stern moral hazard problem. In this regard, the recipients promotes to use alternate way of consumption and the labor market effort reduce accordingly (Jawaid & Raza, 2014). Remittances may affect overall productivity of the through the enhancement of effective investment which further change the eminence of remittance receiving country's financial intermediation. Considering remittance as capital inflow where the investment of remitter amount is invested, then the investment pattern is distressed due to drawbacks and informational benefits compared with local financial intermediaries. However, the quantity of funds may also increase through remittance in the banking system. Therefore, the financial expansion improve and the growth of economy is appreciated (Barajas, Chami, Fullenkamp, Gapen, & Montiel, 2009).

Efficient sum of foreign exchange reserves is a necessary factor to pay the import bills whereas the gap in the foreign reserve are an important dilemma for developing

countries. It is to be noted that, remittances may be useful in strengthening the foreign exchange earnings specifically in the case of developing countries. Remittances inflows creates an opportunity to reduce the gap of foreign exchange reserves. In past, many empirical studies have highlighted this argument using panel and cross sectional data to explain the relationship between economic growth and remittances (Chami, Fullenkamp, & Jahjah, 2003; Faini, 2006; Fayissa & Nsiah, 2010 and many more) and many more). Additionally, fewer time series empirical investigation has also been conducted in this manner (Azam & Khan, 2011; Karagöz, 2009; Waheed & Aleem, 2008). In this context, the relationship between economic growth and worker remittances were found to be significant negative (Chami et al., 2003; Jawaid & Raza, 2014; Karagöz, 2009; Tehseen Jawaid & Raza, 2012; Waheed & Aleem, 2008).

Some empirical studies also found the negative impact of workers' remittances on economic growth (Chami et al., 2003; Jawaid & Raza, 2014; Karagöz, 2009; Tehseen Jawaid & Raza, 2012; Waheed & Aleem, 2008). In 1974, one study of Becker's pointed out that migrant's remittances may not be considered as profit driven due to spending on consumption rather than investment in Pakistan. Another study of Kritz, Keely, and Tomasi (1981) signify that imports may increase through remittances in the country which further widen the deficit in balance of payment. On the same vein, Keely and Tran (1989) argued that remittances are the dangerous source of finance due to volatility in the migration of people which further diminish the foreign exchange reserves of the country. Sofranko and Idris (1999) continue this argument and further suggest that people use remittances for their daily use of consumption while the savings through

remittances may obsolete in this manner. However, remittances have compensatory nature and it is considered as idleness among recipients (Kapur & McHale, 2003).

In most of the developing countries, it is expected that when facing a scarcity of capital would resort to borrowing from external sources so as to supplement domestic saving (Aluko & Arowolo, 2010; Safdari & Mehrizi, 2011; Sulaiman & Azeez, 2012). Soludo (2003) asserted that countries borrow for two broad reasons; macroeconomic reason that is to finance higher level of consumption and investment or to finance transitory balance of payment deficit and avoid budget constraint so as to boost economic growth and reduce poverty. The constant need for governments to borrow in order to finance budget deficit has led to the creation of external debt (Osinubi & Olaleru, 2006).

External debt is a major source of public receipts and financing capital accumulation in any economy (Adepoju, Salau, & Obayelu, 2007). It is a medium used by countries to bridge their deficits and carry out economic projects that are able to increase the standard of living of the citizenry and promote sustainable growth and development. (Hameed, Ashraf, & Chaudhary, 2008) stated that external borrowing ought to accelerate economic growth especially when domestic financing is inadequate. External debt also improves total factor productivity through an increase in output which in turn enhances Gross Domestic product (GDP) growth of a nation. The importance of external debt cannot be overemphasized as it is an ardent booster of growth and thus improves living standards thereby alleviating poverty.

It is widely recognized in the international community that excessive foreign indebtedness in most developing countries is a major impediment to their economic growth and stability (Audu, 2004; Mutasa, 2003). Developing countries like Nigeria have often contracted large amount of external debts that has led to the mounting of trade debt arrears at highly concessional interest rates. Gohar, Bhutto, and Butt (2007) opined that accumulated debt service payments create a lot of problems for countries especially the developing nations reason being that a debt is actually serviced for more than the amount it was acquired and this slows down the growth process in such nations. The inability of the Nigerian economy to meet its debt service payments obligations has resulted in debt overhang or debt service burden that has militated against her growth and development (Audu, 2004).

External borrowing has a significant impact on the growth and investment of a nation up to a point where high levels of external debt servicing sets in and affects the growth as the focus moves from financing private investment to repayments of debts. Pattillo, Poirson, and Ricci (2002) asserted that at low levels debt has positive effects on growth but above particular points or thresholds accumulated debt begins to have a negative impact on growth. Furthermore, Fosu (2009) observed that high debt service payments shifts spending away from health, educational and social sectors. This obscures the motive behind external borrowing which is to boost growth and development rather than get drowned in a pool of debt service payments which eats up most of the nation's resources and hinders growth due to high interest payments on external debt.

These days the foreign debt crisis represent a reality worldwide. Currently there are several countries that pass through a period of serious economic difficulties, in particular through the triggering of several external debt crises. Despite the current debt crisis being huge object emphasis, this kind of economic phenomenon is nothing new, and there are in fact several registers of external debt crises that have occurred in the last few centuries. Reinhart and Rogoff (2009), make a detailed study of many crises of the last eight centuries. And yet, despite all the studies done over the years, the crises (in particular the external debt crisis) continue to emerge.

Debt allows countries to invest beyond its own available funds by borrowing from surpluses of capital (Klein, 1994). The resulting debt is supposed to generate growth and foster development. However, to generate resources and be able to repay the loan, the latter must be used effectively and in productive sectors. The gap between the need for necessary investments and available resources was enormous. This is why most of these countries have had to rely on a strong debt that they must now manage, the increased requirements very quickly exceeded the financing capacities.

Many researchers believe that exports of a country play a vital and significant role to enhance the growth of the economy (Balaguer & Cantavella-Jorda, 2002; Dodaro, 1991; Omri, Daly, Rault, & Chaibi, 2015; Tang, Lai, & Ozturk, 2015; Vamvoukas, 2007). The macro-economic theory is in line with this argument since the exports are included in an economy (Kaldor, 1967; Krueger, 1990; Paul Michael Romer, 1989). On the same vein, the spillover effect of the export sector in the production process of an economy also

contributes in the total productivity of a country. Moreover, export help in importing high value technology, products and inputs that cause increases in the productive capacity of a country (Jung & Marshall, 1985; Vamvoukas, 2007). On the other hand, economic growth excludes export if the domestic investment and consumption is crowd out. However, highly specialized product may negatively affect the economic growth (Moon, 1998).

In the sense of export growth, it increases the production possibility and allow employment growth of a country. Past studies dealt with export and economic growth relationship discuss on two broader canvas. Firstly, the effort in the foreign trade multiplier is mainly associated with the export-economic growth relationship. Secondly, the economies of scale created through competition in the export sector, which in turn greater economic growth (Ramos, 2001). In developing countries, this export-economic growth relationship has attained much attention in both empirically and theoretically. The significant impact of export on economic growth introduces the nature of the relationship between them. More precisely, the examination of the co-movement of these two economic variables is necessary to investigate. In addition, then it may also provide an evidence over the causal relationship between these two variables.

In the light of the above argument, theoretically, there exist four major relationships between export and economic growth, namely, growth led export, export led growth, no causal and no relationship and two way causal relationship between economic growth and export. All these relationships are possible and investigate empirically.

According to the basic economic theory, growth in exports may directly influence and contribute to economic growth (Stolper, 1947). The output growth accelerates if scarce resources shift from lower productivity local sector to greater productivity export sector. Economic theory also signifies that economic growth is mainly due to exports because it provides a source of foreign exchange in the country. It is very important when domestic savings in the country are inadequate. Additionally, economic growth may also trigger in the presence of efficient market size expansion, this leads towards sufficient technological change and higher capital formation. By keeping in view of causal relationship between economic growth and exports, these two variables can behave in both the directions. The reverse relationship might well exist from economic growth to export growth. This reverse causality direction is often termed growth-led export hypothesis. The argument is that the dynamics of domestic growth is sufficient to describe export growth (Jung & Marshall, 1985). In addition, the competitiveness of export products increases, which in turn accelerates economic growth (Kaldor, 1967).

In recent years, the frequent occurrence of financial crises around the world, has awakened the debate about the causes, consequences, impact and aftershocks of these crises. In general, the financial crises are associated with problems in the banking sector, the increased uncertainty, the existence of "bubbles", to globalization, to the climate of financial instability or the periods when economies show poor performance. The literature shows that foreign capital inflows are volatile and pro-cyclical and decline during crisis times. These patterns are more extreme in different income level countries

and have even motivated the use of the term “sudden stops” to refer to the large collapses in capital inflows that often accompany crises.²

At the beginning of the Decade of 90, Finland and Japan were affected by serious bank crises. In the case of Finland, the devaluation of assets resulted in the slowdown of the economy, which led to severe crises in the banking sector (Drees & Pazarbasioglu, 1998). As for Japan, the collapse of the asset price bubble has led most banks to the state of insolvency (Hoshi & Kashyap, 2004). Also the so-called Tequila Crisis of Mexico 1994 was a combination of a weakened banking system, debt denominated in dollars and political shocks, which led to devaluation of the currency and a deep financial crisis (Calvo, 1998; S. Edwards & Vegh, 1997). In the study of Balino et al. (1999), the evidence that the financial weakness could harm and influence the behavior of an entire economy, was demonstrated in the crises in East Asia in 1997, during which the decline of asset prices, has led these countries to high economic growth, the encounter and facing an economic decline.

International economic integration puts a country's fortunes partly into the hands of others. When integration takes the form of financial interdependence, the potential domestic impact of external events is magnified manifold. The global economic crisis of 2007–2009 and the European sovereign debt crisis that followed have unleashed market forces that even policymakers in the mature economies were ill prepared to counteract. The existing informational and institutional structure for global policymaking remains woefully inadequate to the challenge of financial globalization. The large swings of

² See for example, Calvo (1998), Calvo et al. (2008), and Cavallo and Frankel (2008).

financial flows during the financial crisis of 2007-09 have put the link between global financial integration, financial contagion and financial stability to the forefront. While there is no clear consensus in the literature regarding the main causal factors of financial crises, or their main propagation mechanisms, one channel that has received increasing interest is the external financial account. Excessive non-contingent liabilities (such as debt), overly large *short-term* debt, as well as currency mismatches may increase the riskiness of countries' external balance sheets. Certain forms of international financial integration, especially via leveraged financial institutions such as banks, or through synchronized and abruptly changing financial market perceptions may propagate financial shocks across countries.

The experience of emerging and developing economies on the relationship of foreign capital inflows and financial or banking crises do not show uniform results. Joyce, Lasasoa, Stevens, and Tong (2011) argue that "While the economies of Asia and Latin America suffered from a precipitous fall in their exports, their financial sectors were largely able to weather the turbulence due to the intervention of domestic regulators and central banks. On the other hand, foreign direct investment (FDI) are determined, in the long term by more stable fundamental economic characteristics. They therefore represent less risky capital flows and are instead immune to a movement of massive withdrawal in case of deterioration of the economic situation of the host country (Prasad, Rogoff, Wei, & Kose, 2003).

The trade links between the economies of the world plays an important role specifically, when one country crisis period affects the other country. Previously, empirical studies report that the impact of financial crisis mainly decreases the trade flows of a country (Chor & Manova, 2012; Iacovone & Zavacka, 2009). By keeping in view of an assumption about the exogenous effect of the financial crisis on the real sector, it can be seen that the sectors that are heavily dependent on external financing produce the worst performance in financial distress period.

The trade flows in crisis time are mainly associated with three theoretical developments. The first argument is that, the chance of being international firm is to better access towards the financial markets, specifically due to the sunk cost of the foreign market. The second argument is linked to the greater share of trade balances and export shares due to efficient developed financial markets in the country. This fact is supported by financial market long-term investment in export markets. Lastly, the trade openness and the export pattern follow decreasing trend due to the financial crisis in which an indirect effect observes on economic growth and direct effect on trade finance. Additionally, the cost of trade finance transactions increases that covers higher credit costs, drop in trade flows and funding cost. Overall, the export activities are mainly linked with finance especially to those sectors that are involved in external financing.

It is a due fact that the demand of goods in global economic decline in the financial crisis which is not very surprising. In this sense, three major attributes cause the demand of goods. First, the income of an individual is lower down while the production process

gets also slow. This signifies that, lower the income level, lesser the purchasing power promoted the lower demand. Although, in financial crisis time, investment and consumption trends are mainly associated with the expectations of decision making plans. On the same token, the second reason of the lower demand rise as the negative sentiments generate among investor and consumer about future economic growth during the financial crisis period. Therefore, crisis period can be a survival time if income, spending is less and income save is more. Lastly, the third reason of decline in global demand due to economic policy namely, Protectionism.

In past, many empirical studies have conducted to check the impact of financial crisis on the foreign direct investment of a country (Alfaro, Chanda, Kalemli-Ozcan, & Sayek, 2010; Bogach & Noy, 2012; Dornean, Işan, & Oanea, 2012; Skovgaard Poulsen & Hufbauer, 2011). The earlier studies mainly focused on the different fundamental reasons of financial crisis such as currency, etc. The first generation model of financial crisis deals with the fiscal policy choices (Burnside, Eichenbaum, & Rebelo, 2001; Flood & Garber, 1984; P. R. Krugman, 1979). These models explain the drop in exchange rates during the financial crisis and this decline in exchange rate, prolonged as long as government continues to monetize its deficit. However, no change in real exchange rate is observed, which further did not impact foreign direct investment. The second generation of financial crisis study explain the multiple equilibrium and signifies that foreign direct investment opportunities increases due to equilibrium in which, the depreciation in real exchange rate is not necessary in the economic growth (Chamley, 2003; Masson & Drazen, 1994; Obstfeld, 1996).

In recent years we have been witnessing the increasing occurrence of currency and financial crises, both in developed or less developed countries. The countries have become more vulnerable and not able to predict currency collapses. A currency crisis is considered a sudden loss in confidence and consequent depreciation of the national currency in relation to other currencies, hence the importance of studies on the speculative attacks, since in these cases is affected the real sphere of economy. In last 20 years, the world seen a 20 major events of banking, currency or financial crisis. The list of financial crises is given below

1. Savings and loan crisis of the 1990s in the U.S.
2. Early 1990s Recession
3. 1991 India economic crisis
4. Finnish banking crisis (1990s)
5. Swedish banking crisis (1990s)
6. European Monetary System (EMS) crisis (1992-1993)
7. 1994 economic crisis in Mexico
8. 1997 Asian financial crisis
9. 1998 Russian financial crisis
10. Argentine economic crisis (1999–2002)
11. Dot-com bubble crises of 2000
12. Subprime mortgage crisis
13. United States housing bubble and United States housing market correction

14. 2008–2012 Icelandic financial crisis
15. 2007–08 – Global financial crisis
16. Russian financial crisis of 2008–2009
17. Automotive industry crisis of 2008–2010
18. European sovereign debt crisis
19. 2014 Russian financial crisis
20. 2015 Greece Debt Crisis

In the remaining paragraphs of this section, we discuss the statistics of different forms of foreign capital inflows and economic growth in low income, low middle income, upper middle income and high income countries for the last 19 years from 1995-2013 by using the WDI database of World bank. In Figure 1.1 and 1.2, we discuss the trend analysis of last 19 years of exports of goods and services for the low income, low middle income, upper middle income and high income countries.

The trend analysis of exports available at Figure 1.1 and 1.2 explain us that the upper middle income countries are having the highest share of exports as percentage of GDP. The high income countries are relatively low share as compare to upper middle income countries, but it must be remain that in the high income countries the size of the gross domestic product are much higher as compare to middle income countries. The low income countries are having the lowest share of exports as %age of GDP as compare to other income level countries. It can also be seen from the both Figures that the global financial crisis of 2007-08 have significantly affected the share of exports in all income

level countries, but the intensity of that crisis was more harmful for the high, upper middle and low middle income countries as compare to low income countries. We can also see the negative downward trend in the upper middle income and lower middle income countries during the period of Asian financial crisis of 1997-1999. In Asia, the most of the economies are lower middle income or upper middle income countries, therefore this effect is more significant in these income level countries. In Figure 1.3 and 1.4, we discuss the trend analysis of last 19 years of foreign direct investment for the low income, low middle income, upper middle income and high income countries.

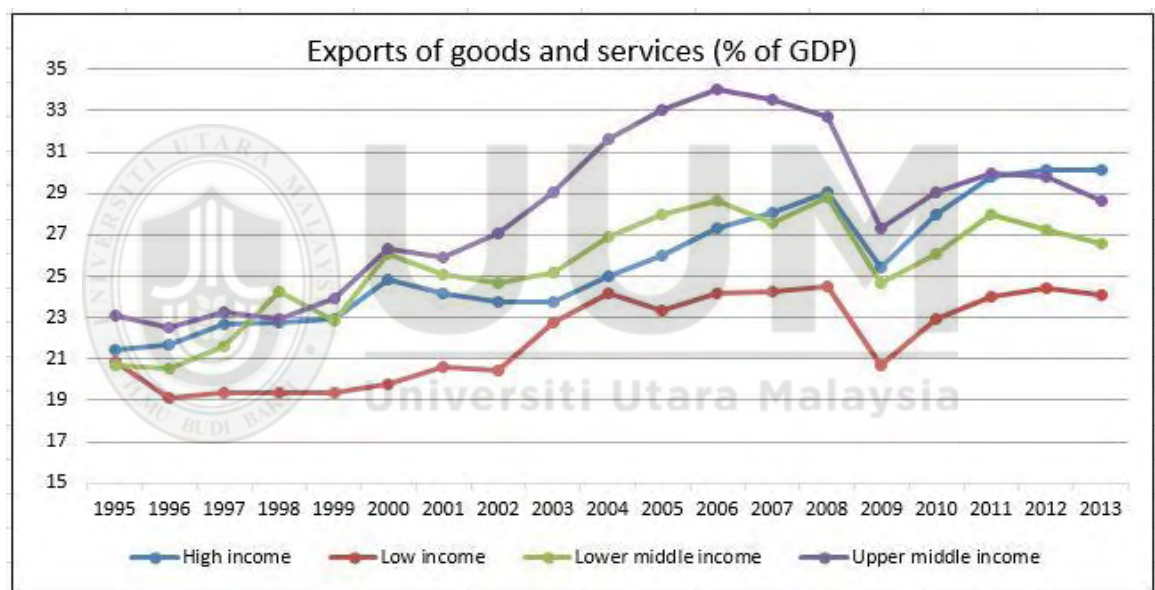


Figure 1.1 *Exports of goods and services as % of GDP for different income level countries*

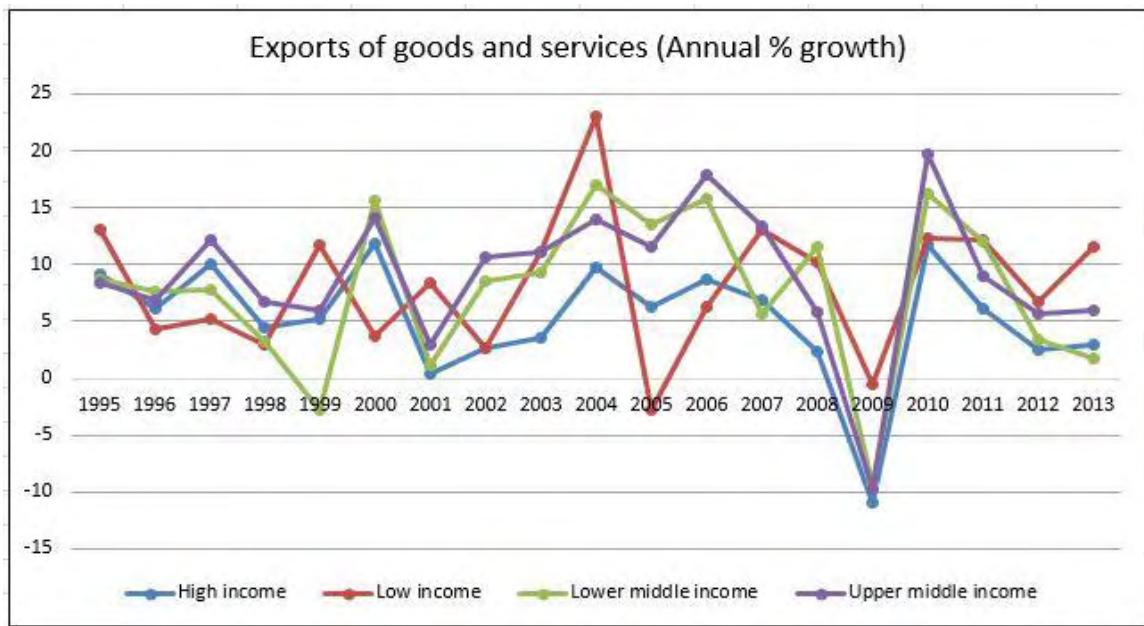


Figure 1.2 *Exports of goods and services (Annual growth) for different income level countries*

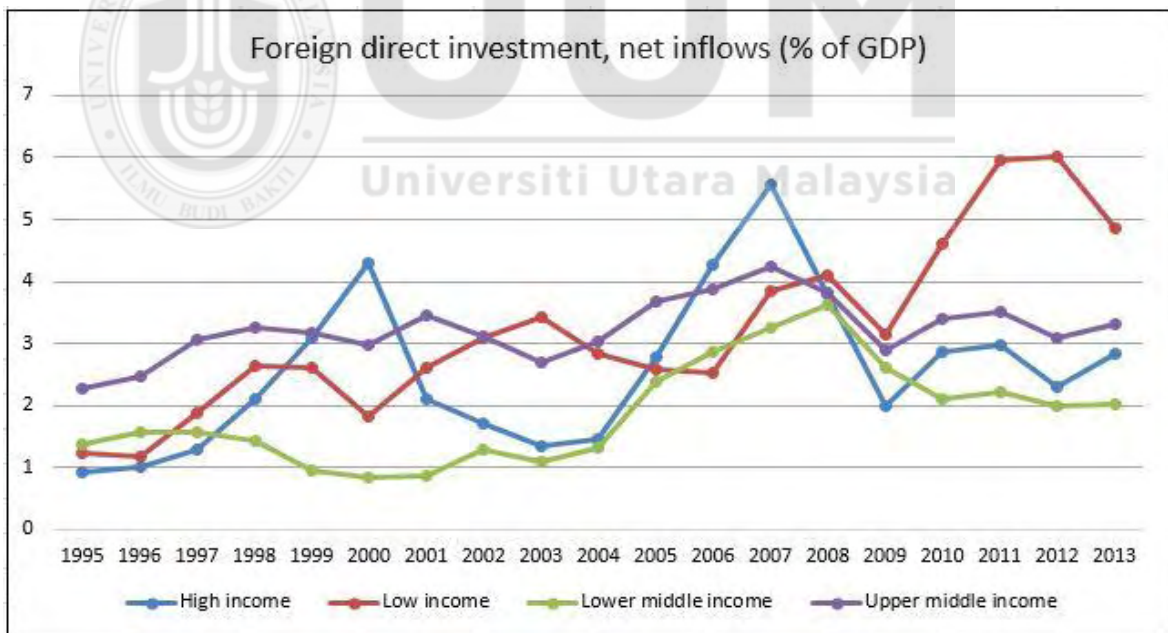


Figure 1.3 *Foreign direct investment as % of GDP for different income level countries*

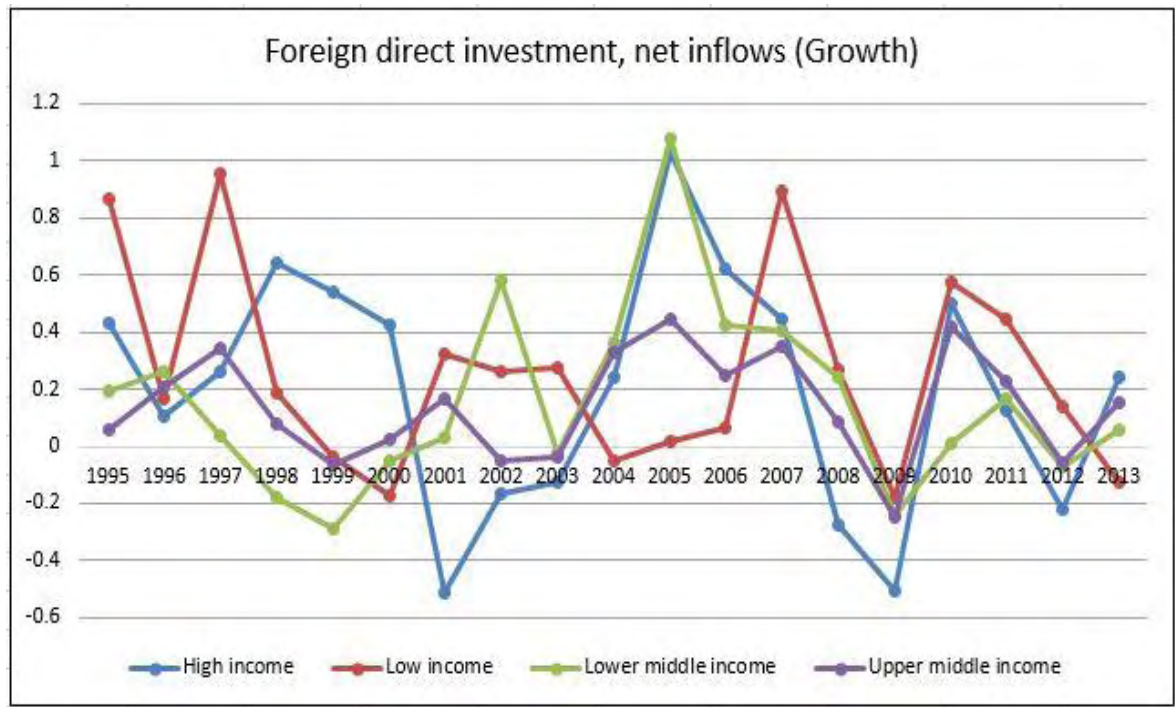


Figure 1.4 *Foreign direct investment (Annual growth) for different income level countries*

The trend analysis of FDI available at Figure 1.3 and 1.4 explain us that the upper middle income countries are having the highest share of FDI as percentage of GDP till the coming of global financial crisis of 2007-08, but after that crisis the trend of FDI shifted towards the low income countries. It is more sensible to change the flow of FDI towards low income countries because these countries were less affected of the financial crisis and their market share of exports is also less affected as compare to other income level countries, which is also can be seen of Figure 1.1 and 1.2. The low middle income countries are having the lowest share of FDI as % age of GDP as compare to other income level countries throughout the study period.

It can also be seen from the both Figures that the global financial crisis of 2007-08 have significantly affected the share of FDI in all income level countries, but the intensity of

that crisis was more harmful for the high, upper middle and low middle income countries as compare to low income countries. We can also see that the Dot-Com bubble crisis of early 2000's have also significantly affected the share of FDI in all income level countries. The Asian financial crisis also affected in the negative downward trend in the upper middle income, lower middle income and low income countries during the period of Asian financial crisis of 1997-1999. However, the Asian financial crisis did not severely affect the high income countries. In Figure 1.5 and 1.6, we discuss the trend analysis of last 19 years of workers' remittances for the low income, low middle income, upper middle income and high income countries.

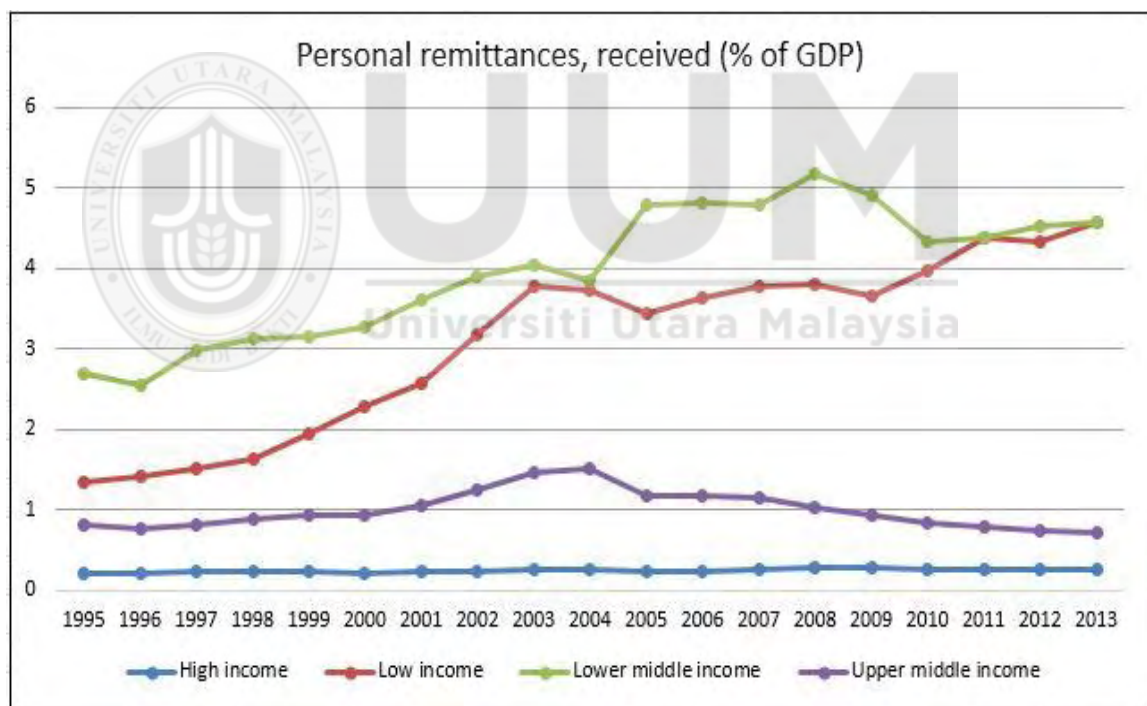


Figure 1.5 *Workers' remittances as % of GDP for different income level countries*

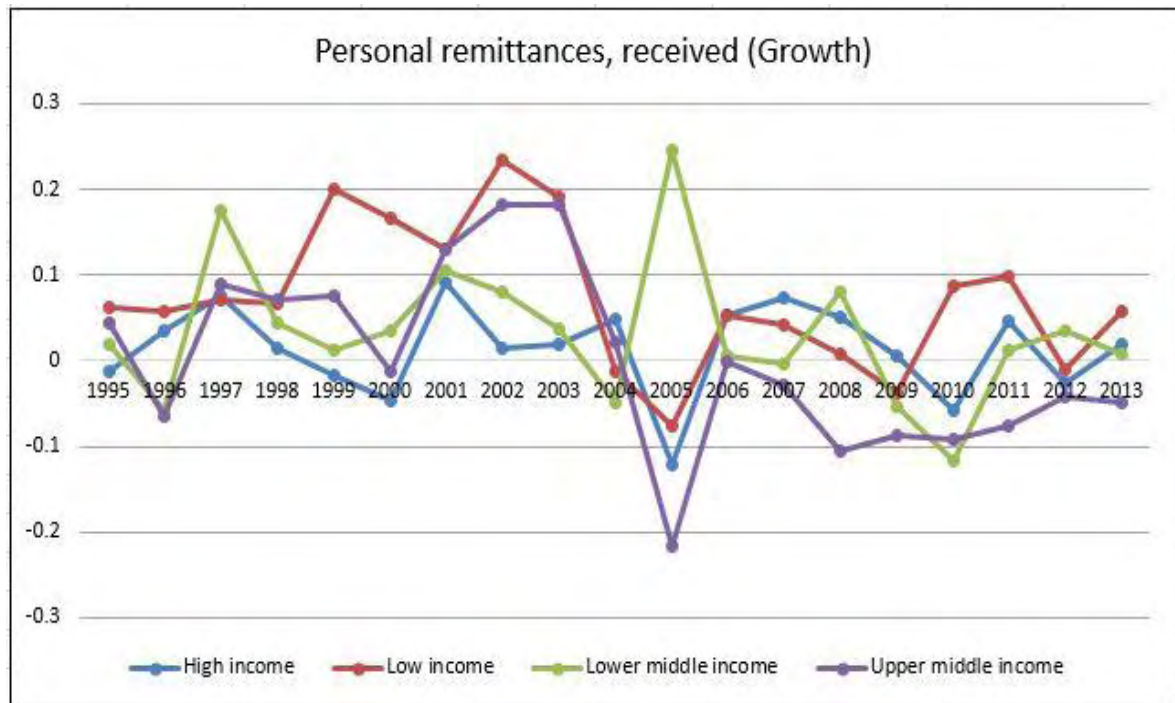


Figure 1.6 *Workers' remittances (Annual growth) for different income level countries*

The trend analysis of remittances available at Figure 1.5 and 1.6 explain us that the lower middle income countries are having the highest share of REM as percentage of GDP till the 2013, but from 2013, the low income countries are almost having the same share of REM as % of GDP as compare to lower middle income countries. We can see that the share of REM has increased during the global financial crisis of 2007-08 in lower middle income and low income countries. In the period of financial crisis, the migrants send more money to their households for protecting their families from the negative shocks of financial crisis. The same pattern we can also see in the period of Asian financial crisis and Dot-Com bubble crisis. In Figure 1.7 we discuss the trend analysis of last 19 years of external debt for the low income, low middle income, upper middle income and high income countries.

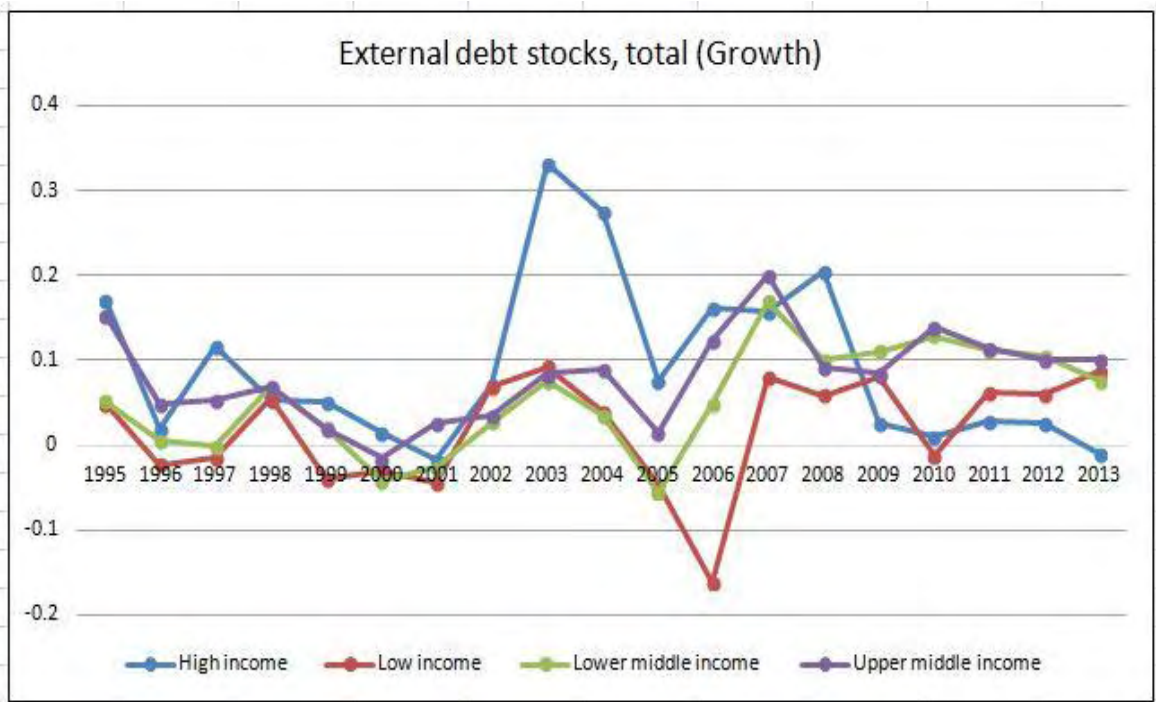


Figure 1.7 External Debt (Annual growth) for different income level countries

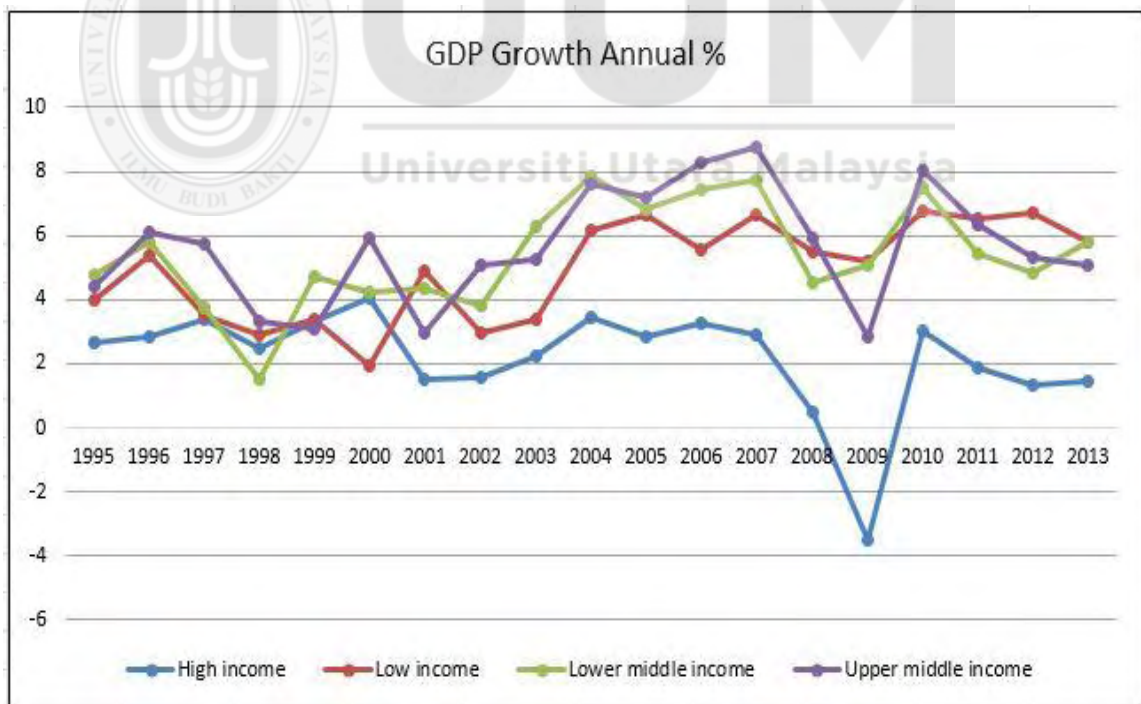


Figure 1.8 Gross domestic product (Annual growth) for different income level countries

The trend analysis of GDP available at Figure 1.8 show that the upper middle income countries are having the highest growth rate in GDP in the last 19 years. The high income developed economies are having the comparatively low but sustainable growth in last two decades and till the occurrence of global financial crisis of 2007-2008. The lower middle income and low income countries are having very mix and volatile growth rates in the last 20 years. We can see that the GDP growth rate severely affected in the period of global financial crisis. The high income countries are most effected in the period of global financial crisis. The upper middle income is the second one whose growth rate are down significantly. The growth rates in low income countries remained comparatively stable in the period of global financial crises.

The same pattern we can also see in the period of Dot-Com bubble crisis. The growth rates of upper middle, lower middle and low income countries were significantly down. Whereas, the growth rate of high income countries was marginally effected. However, in the period of Asian financial crisis the middle income and low income countries are more effected as compare to high income countries.

1.3 Problem Statement

Foreign capital inflows play a significant role in the economic growth of developing and developed countries (Raza & Jawaid, 2014). Foreign capital has been considered as a key element in the process of economic globalization and integration of the world economy. The flows of foreign capital have been welcomed, to complement domestic financial resources, as a development catalyst. The experience of the newly

industrialized or emerging economies has firmed the belief that foreign capital could fill the resource gap of the capital-deficient economies (Ali, 2014; Nkoro & KelvinUko, 2012).

These all foreign capital inflows play a vital role in the economic development of an economy. Empirical studies conclude that these foreign inflows have positive as well as negative impact on economic development and results vary between different countries. Foreign direct investment (FDI) are perceived as a factor of economic growth, a complement to domestic investment and a source of financing of the current account deficit (Campos & Kinoshita, 2002; De Mello Jr, 1997). FDI contribute the host country in the form of technological externalities, the formation of human capital or have access to foreign markets which lead to long-term economic growth (Nicolini & Resmini, 2010). FDI also resulted a reduction in unemployment by creating more employment opportunities in host economy (Siddique et al., 2012).

The entrance of FDI in the host country may also have negative influence on economic growth. The introduction of new technologies assumes or requires the existence of skilled labor in the host country, which are capable and trained of using those technologies. If the supply of labor is short in host country than it leads to negative impact on production and economic growth (Yousaf, Nasir, Naqvi, Haider, & Bhutta, 2011). Entrance of foreign companies in the imperfect competitive markets may leads to reduce market share of domestic producers (Belloumi, 2014). Capabilities of economies

of scale also suffer in domestic producers because of loss of market share, which also have a negative impact on productivity (Markusen & Venables, 1999).

Migrant workers' remittances are gradually becoming an important source of foreign income for developing economies (Jawaid & Raza, 2014). More precisely, workers' remittances are found to be significant source of increase in investments and consumption in host countries. Workers' remittances have been proved to be a source of alleviating poverty in developing countries (Imai et al., 2011). The increase in workers' remittances also resulted in an increase in the private investments (Jongwanich, 2007). Furthermore, remittances are found to be in a positive trend when the host economy suffers a recession because of financial crisis, political conflicts or natural disasters etc. as expatriates remit more during crucial time for so that they can support their families and nations accordingly (Siddique et al., 2012).

Some empirical studies also found the negative impact of workers' remittances on economic growth. The economic growth may have negative impact of capital inflows (remittances) in the host country which causes the decrease in labor force participation. This type of capital inflows may consider just as transfer of income. Furthermore, this transfer of income may be stressed by severe moral hazard problem. In this regard, the recipients promotes to use alternate way of consumption and the labor market effort reduce accordingly (Jawaid & Raza, 2014). The migrant's remittances may not be considered as profit driven due to spending on consumption rather than on investment

activities (S. Lim & Simmons, 2015). The imports may increase through remittances in the country which further widen the deficit in balance of payment (Jouini, 2015).

In most of the developing countries, it is expected that when facing a scarcity of capital would resort to borrowing from external sources so as to supplement domestic saving (Sulaiman & Azeez, 2012). Soludo (2003) asserted that countries borrow for two broad reasons; macroeconomic reason that is to finance higher level of consumption and investment or to finance transitory balance of payment deficit and avoid budget constraint so as to boost economic growth and reduce poverty. External debt is a major source of public receipts and financing capital accumulation in any economy (Adepoju et al., 2007). It is a medium used by countries to bridge their deficits and carry out economic projects that are able to increase the standard of living of the citizenry and promote sustainable growth and development.

Gohar et al. (2007) opined that accumulated debt service payments create a lot of problems for countries especially the developing nations reason being that a debt is actually serviced for more than the amount it was acquired and this slows down the growth process in such nations. Daud, Ahmad, and Azman-Saini (2013) asserted that at low levels debt has positive effects on growth but above particular points or thresholds accumulated debt begins to have a negative impact on growth. Furthermore, Kasidi and Said (2013) observed that high debt service payments shifts spending away from health, educational and other social sectors.

The exports of a country play a vital and significant role to enhance the growth of the economy (Omri et al., 2015; Tang et al., 2015). The spillover effect of the export sector in the production process of an economy contributes in the total productivity of a country. Moreover, export help in importing high value technology products and inputs that cause increases in the productive capacity of a country which also leads to improve the efficiency in the production process (P. Krugman, 1984; Lancaster, 1980; Vamvoukas, 2007). The realization of economies of scale results export rise with the help of rise in productivity. This increment in exports can further reduce cost, which may also increase in the productivity growth (Helpman & Krugman, 1985). Moreover, the possibility of negative linkage between economic growth and exchange rate may exist, meaning that, rise in economic output level decline in the export growth level. On the same note, the decrease in economic growth in the presence of export growth occurs when growth in exports is appreciating against the domestic consumption (Dodaro, 1993).

In last two decades, the frequent occurrence of financial crises around the world, has awakened the debate about the causes, consequences, impact and aftershocks of these crises. In general, the financial crises are associated with problems in the banking sector, the increased economic uncertainties, existence of "bubbles", globalization, climate of financial instability or the periods when economies show poor performance. The literature shows that foreign capital inflows are volatile and pro-cyclical and decline during times of financial crisis. These patterns are more extreme in different income level countries and have even motivated the use of the term “sudden stops” to refer to

the large collapses in capital inflows that often accompany crises Cavallo & Frankel, 2008).

Previously, empirical studies report that the impact of financial crisis mainly decreases the inflows of foreign capital in a country (Chor & Manova, 2012; Iacovone & Zavacka, 2009). These studies conclude that the economies which are heavily dependent on external financing produce the worst performance in financial distress period. In the period of financial crisis, the production and income of an economy is lower down. The financial crisis leads to generate the negative sentiments among foreign investors about future economic growth during the financial crisis period (Bogach & Noy, 2012; Dornean et al., 2012; Skovgaard Poulsen & Hufbauer, 2011). Furthermore, the drop in exchange rates during the financial crisis worsen the economic conditions and it is prolonged as long as government continues to monetize its deficit.

A currency crisis is considered a sudden loss in confidence and consequent depreciation of the national currency in relation to other currencies, hence the importance of studies on the speculative attacks, since in these cases is affected the real sphere of economy. In recent years we have been witnessing the increasing occurrence of currency and financial crises, both in developed or less developed countries. In last 20 years, the world seen a 20 major events of financial crisis (banking crisis and currency crisis). The countries have become more vulnerable and not able to predict financial and currency collapses.

There are very few studies have been done which analyze the impact of financial crisis on FCI and most of them are linked with the time series study of a specific country. The movement of FCI is a matter of different income level countries and it is generally moved from high and upper middle income countries to lower middle and low income countries. The above discussion concludes that the foreign capital inflows (FCI) in the form of foreign direct investment, external debt, exports of goods and services and workers' remittances have significant influence over the economic growth, but the results were contradictory and vary within the countries. Therefore, there is a need to identify the relationship between FCI and economic growth on the homogenous panel set of different income level countries i.e. low income, lower middle income, upper middle income and high income countries.

Furthermore, it is also observing that the financial crises have a significant influence over the flows of foreign capital in both developing and developed economies. These financial crises effect the flow of foreign direct investment and international trade among the countries. Furthermore, the required external debt for the development projects are also become scare for the developing economies because of the consistent events of financial crisis. The trend analysis discussed in the background section of this study also highlighted the significant volatility in the flows of foreign capital during the period of financial crisis (banking crisis and currency crisis). Therefore, there is a need to identify the relationship between FCI and economic growth in the presence of currency crisis and banking crisis on the homogenous panel set of different income level countries.

1.4 Research Questions

Several questions arise from the problem statement, which include:

1. What is the impact of foreign direct investment, foreign debt, workers' remittances and exports of goods and services on economic growth in high, upper middle, lower middle and low income countries?
2. What is the impact of foreign direct investment, foreign debt, workers' remittances and exports of goods and services on economic growth in high, upper middle, lower middle and low income countries in the presence of currency crises.?
3. What is the impact of foreign direct investment, foreign debt, workers' remittances and exports of goods and services on economic growth in high, upper middle, lower middle and low income countries in the presence of banking crises?

1.5 Objective(s) of the Study

The general objective of this study is to identify the impact of foreign capital inflows on economic growth of different income level countries in the presence of currency and banking crises. Specifically, this study aims at the following objectives:

1. To examine the impact of foreign direct investment, foreign debt, workers' remittances and exports of goods and services on economic growth in high, upper middle, lower middle and low income countries.
2. To examine the impact of foreign direct investment, foreign debt, workers' remittances and exports of goods and services on economic growth in high, upper middle, lower middle and low income countries in the presence of currency crises.

3. To examine the impact of foreign direct investment, foreign debt, workers' remittances and exports of goods and services on economic growth in high, upper middle, lower middle and low income countries in the presence of banking crises.

1.6 Justification and Contribution of the Study

Theoretically and empirically it seems that foreign capital inflows have different possible effects on growth and development performance of an economy. If foreign capital inflows are used in an efficient and productive manner then, they will promote country's growth performance. If foreign capital inflows are used in unproductive manner then they will not contribute in a long run, their impact on economic development will only for a short run. Furthermore, the financial crisis (currency and banking crisis) also have a significant influence in the attraction of foreign capital inflows. These financial crises effect the flow of foreign capital inflows among the countries. Furthermore, the required external debt for the development projects are also become scare for the developing economies because of the consistent events of financial crisis. In last 20 years, the world seen a 20 major events of financial crisis (banking crisis and currency crisis). The countries have become more vulnerable and not able to predict financial and currency collapses.

There are very few studies have been done which analyze the impact of financial crisis on FCI and most of them are linked with the time series study of a specific country. Empirical studies show that the behavior and relationship of foreign capital inflows with economic growth has varies from country to country. The movement of FCI is a matter

of different income level countries and it is generally moved from high and upper middle income countries to lower middle and low income countries. Therefore, we need to analyze the relationship of foreign capital inflows with economic development in the presence of currency crisis and banking crisis, in high income, middle income, and low income countries separately to better judge the behavior of foreign capital inflows.

This study fulfills the missing area of research in foreign capital inflows (FCI) by evaluating the relationship between foreign capital inflows and economic growth of countries with different income levels. The major contribution of this study is to analyze the influencing role of currency crisis and banking crisis on the relationship of foreign capital inflows and economic growth. In this research, we divided the financial crisis in two broader forms of crisis i.e. banking crisis and currency crisis. Furthermore, the major methodological contribution of this study is lies in the measurement of currency and banking crisis for each country. In past studies, the researchers just use the dummy variable of financial year in which the main crisis event occurred in the World to analyze the influence of financial crises on considered variables. For Instance, for the period of Global financial crisis they put the value 1 for 2007-2009 and for the other years they put zero. However, it is empirically proved that the Global financial crisis did not mainly affect many Asian countries. Therefore, it is not appropriate to consider the year of financial crisis for the whole world.

Therefore, to cover this issue we have measured the period of currency and banking crisis specifically for each country by using a unique methodology which is discussed in

details in the chapter of Methodology. Another major contribution of this research is to use the different items of foreign capital inflows of any country. In most of the past studies researchers used only one item to analyze the impact of foreign capital inflow on economic development of economies. But in literature there are more than one indicator are available to analyze the overall foreign capital inflows of any country.

This study is using four major items of foreign capital inflows, which play a major role in the economic development namely; foreign direct investment, workers' remittances, external public debt and exports of goods and services. These four items are the main sources of foreign capital inflows for the countries. This study analyzes the relationship of four major items of foreign capital inflows with economic growth in high income, upper middle income, lower middle income and low income countries to better judge the relationship between foreign capital inflows and economic growth. This study will be beneficial for all economies either the high income, middle income or low income.

This study also provides policy recommendations to policy makers of all targeted countries. This study provide the comparison of investment in different income level countries for the foreign investors. The study will also provide guidance to foreign investors in taking the investment decisions in different income level countries in the period of financial crises. Furthermore, the results of this study will also help the policy makers to formulate the policies related to foreign capital inflows in the period of financial crises. This study will also provide useful information about the role of

external debt in the process of economic growth in different income level groups. The results of this study will help the policymakers to formulate better debt policies.

1.7 Scope of the Study

This study examines the impact of foreign capital inflows on economic growth of different income level countries. Furthermore, this study also analyzes the relationship of foreign capital inflows and economic growth in the presence of currency and banking crises. We collect the balanced panel data of 96 countries and group them on the basis of different income levels. The final sample of this study consists of 10 low income countries, 23 lower middle income countries, 30 upper middle income countries and 33 high income countries. This study covers the period from 1995 to 2013.

This study is using four major items of foreign capital inflows, which play a major role in the economic development namely; foreign direct investment, workers' remittances, external public debt and exports of goods and services. These four items are the main sources of foreign capital inflows for the countries. This study analyzes the relationship of four major items of foreign capital inflows with economic growth in high income, upper middle income, lower middle income and low income countries to better judge the relationship between foreign capital inflows and economic growth.

We also use the set of control variables based on the potential and significant determinants of economic growth to control their effects in our model. These important determinates of economic growth as a control variable are adopted from the seminal

work of Levine and Renelt (1992) and Barro (1996). These control variables are also endorsed by various researchers as important determinants of economic growth and still in the recent studies these variables are using as main determinates of economic growth such as; (Delgado, Henderson, & Parmeter, 2014; Eggoh & Khan, 2014; Glewwe, Maïga, & Zheng, 2014; Law & Singh, 2014; Manamperi, 2014; Martins & Veiga, 2014; Menyah, Nazlioglu, & Wolde-Rufael, 2014; Teles & Mussolini, 2014)

1.8 Plan of the Study

The thesis is arranged as follows: chapter one consists of the introduction of foreign capital inflows and economic growth, statement of the problem, objective of the study, justification of the study and scope of the study, Chapter two is the theoretical and empirical literature on the relationship of foreign capital inflows, banking crisis, currency crisis and economic growth. Chapter three comprises of the methodology, model specification, sources of data and description of variables. Chapter four is for presentation of results and discussion. Chapter five contains summary of major findings, conclusion, recommendations, limitation of the study and recommendation for future research.

1.9 Summary of the Chapter

Foreign capital has been considered as a key element in the process of economic globalization and integration of the world economy. The flows of foreign capital have been welcomed, to complement domestic financial resources, as a development catalyst. Foreign capital inflows are perceived as a factor of economic growth, a complement to

domestic investment and a source of financing of the current account deficit (DeMello, 1997; Campos and Kinoshita, 2002). Foreign capital inflows contribute the host country in the form of technological externalities, the formation of human capital or have access to foreign markets which lead to long-term economic growth (Nicolini and Resmini, 2010). Foreign capital inflows also resulted a reduction in unemployment by creating more employment opportunities in host economy (Siddique et al., 2012).

In last two decades, the frequent occurrence of financial crises around the world, has awakened the debate about the causes, consequences, impact and aftershocks of these crises. International economic integration puts a country's fortunes partly into the hands of others. Previously, empirical studies report that the impact of financial crisis mainly decreases the inflows of foreign capital in a country (Ronchi, 2004; Iacovone and Zavacka, 2009; Chor and Manova, 2010). These studies conclude that the economies which are heavily dependent on external financing produce the worst performance in financial distress period.

There are very few studies have been done which analyze the impact of financial crisis on FCI and most of them are linked with the time series study of a specific country. The movement of FCI is a matter of different income level countries and it is generally moved from high and upper middle income countries to lower middle and low income countries. This study analyze the relationship between FCI and economic growth in the presence of currency crisis and banking crisis on the homogenous panel set of different income level countries.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, we review both theoretical and empirical literature on the relationship of different types of foreign capital inflows and economic growth. The starting point of every empirical research on economic growth has been with the discussion of the neo-classical theory, Solow growth model, endogenous growth theory and exogenous growth theory. Theoretically, the foreign capital inflows contribute into the process of economic growth by both endogenous and exogenous factors. The theories are discussed below, and then followed by review of empirical studies on different types of foreign capital inflows and economic growth.

2.2 Theoretical background

In this section, we discuss the different theories related to economic growth, foreign direct investment, exports of goods and services, workers' remittances and external debt. Furthermore, we also discuss the theoretical channels through which different types of foreign capital inflows affect the economic growth.

2.2.1 Theories of Economic Growth

The theory of growth can thus be defined as the branch of economics that studies the historical growth of gross domestic product (GDP) of the various countries or regions, almost exclusively by the GDP growth and GDP per capita, because it assumes that

the well-being of the populations is strictly correlated with these indicators (Sen, 1997). In this sense, economic growth refers to growth that is home to the expansion of GDP in a particular country. When we assess the commitment or the efficiency of a given economy, resorted to GDP per capita, since this indicator gives us absolute data, i.e. GDP Figures depending on the population of a country. This indicator is important since one particular country can present a high GDP depending on the size of its population, but this value can be assumed as insignificant when compared with the other countries that have a relatively low GDP.

In fact, this finding highlights the importance of considering the development indicators in a comprehensive sense, since by itself, may not take into account any existing inequality in the distribution of social income, such as mark. Even though currently the GDP per capita is not an indicator par excellence which measures the well-being of the population, it cannot be negligible in assessing the efficiency of an economy, since the component where it derives is assumed as an engine for growth (Young, 1994).

There are basically four parts or wheels that are assumed, by most economists, as the engines of growth of a country, and can these elements be distinctly exploited to reach the result, taking into account the different features that are part of each country. From among these, we highlight the capital accumulation, technological progress, human resources and natural resources (C. I. Jones & Romer, 2009).

The capital of a country can be analyzed from the existing viable infrastructure, machinery, trucks, intangibles, among others. When a given country accumulates capital, this means that increases its production capacity. This mechanism of accumulation is favored when there is an available savings that companies use to invest through financial intermediaries. When there is investment, there is an accumulation of physical capital and, in this perspective, there is a strengthening of the means of production and the consequent increase in production, due to the existence of good communication infrastructure, power plants and good lines of communication that help corporate productivity (Belloumi, 2014).

The second aspect refers us to the state of the art technologies, which is a great indicator of the transformation processes that influence economic dynamics. Technological progress includes different types of innovations, in particular, incremental innovations, which improve the production processes from what already exists, but also radical innovations that create new production processes and new products (Sharma & Abekah, 2008).

The growth has created new limits and has been driven social and technological changes that affect productivity at work in organizations. Technological progress assures that there might be a higher output with the same amount of work equipment (Sen, 1997). In this line of thinking, population growth, increased employment and innovation, assume as decisive factors in the cycle of economic growth. These factors interact in particular in various contexts, characterized by historical routes and private institutions. It is clear

that, over time, increased knowledge and the availability of more sophisticated techniques become workers and equipment more productive (Sharma & Gani, 2004).

Human capital is assumed to be one of the most prevalent factors in the development of a country, because a nation can have many natural resources, cutting-edge technology, a substantial physical capital, but if you do not have qualified human resources, will quickly be confronted with difficulty in integrating these other resource with human resources in the labour market. This aspect assumes particular relevance in many countries, such as the Netherlands, where for example, although there are no large natural resources, there is a great investment in terms of human resources, putting this country into a higher ranking relative to other countries in possession of natural resources and advanced technology (Sen, 1997; Sharma & Abekah, 2008; Sharma & Gani, 2004).

When human resources are well trained and qualified, they become a capital, i.e. an asset since contribute efficiently and effectively for the production, and their productivity is enhanced, providing positive benefits for the company, whether in the national context is in the international context. Internationally, this differentiation of human capital assumes fundamental importance, as this may constitute an attractive factor for FDI, especially in sectors of activity in which it is essential to the FDI component. Therefore, nowadays, the focus on training and technical qualification of human resources is regarded as a great investment for the growth of a nation (Sen, 1997; Sharma & Abekah, 2008; Sharma & Gani, 2004).

Another very important factor which attracts contribute in the economic growth of an economy is the availability of natural resources; i.e. productive and agriculture land, oil, gas, forests, water and mineral resources. Some developed countries, such as Canada and Norway, have grown thanks to the breadth of its primary natural resources, with large oil and gas production, agriculture, fisheries and forest resources. Similarly, the United States of America (USA), with its fertile agricultural land, is the largest producer and exporter of cereals.

However, the existence of natural resources is not a necessary condition for economic success in the modern world. Such as the New York City, for example, thrives primarily due to its dense network of industries and service businesses. Many countries such as Japan, have virtually no natural resources, but it evolved through specialization in certain sectors that rely heavily on more work and human capital than natural resources. In fact, as Young (1994) advocates, possessing only a tiny portion of the area of Nigeria, which is rich in natural resources, the tiny city of Hong Kong has, effectively, a GDP greater than that great African country.

In this sense, the natural resources seem to be sufficient, but not necessary condition for the development of a nation, because there are countries with huge potential, as is the case of the Democratic Republic of the Congo, and that lie within the last rating of HDI. For this reason, it is important to analyze the rationality of the management of the country which has many natural resources and who can optimize, providing a greater advantage for their development, since it attracts investment, minimizing the cost of

transactions, given the existence of other significant infrastructure, such as the distance between the company and the source of supply of raw materials (Baldwin, 2004).

The theories of growth turned in General to understanding the phenomenon of growth, abstracting in general trade relations between countries. Only more recently has been developed effort to integrate trade to economic growth models. The theories of growth can be classified in two generations: (a) neoclassical theories; and (b) new theories of growth, including endogenous growth.

The neoclassical models were developed first by Solow (1956) and Swan (1956) prevailed as a reference for the analysis of growth for several decades. The assumptions about the markets and the production are essentially identical to those of the neoclassical theories of trade. The markets are perfectly competitive, and the production function of the genus Cobb-Douglas. Typically, are employed in two production factors: capital and labor force. The work expands on the basis of demographic dynamics, external to the model. The capital is accumulated in function of external forces, especially those that determine the technological progress. The accumulation of capital, however, suffers from a limitation, that comes from the production function approach of production. According to this approach, the marginal productivity of capital is, by definition, descending. Thus, the rate of capital accumulation and, ultimately, the growth of the economy converge to a potential balance given exclusively by their fundamental characteristics. In other words, there is exogenous growth, without which certain policies, notably the commercial, to be able to change the potential rates of growth.

Under these conditions, the trade does not tend to affect the rate of growth of economies. This is determined in long-term balance by exogenous factors, such as the rate of expansion of the productivity and the structural characteristics of the economy. Relations between trade and growth does not modify the rate of growth of the economy, and this the same in local environments or free trade.

Such restrictions were not necessarily implied in some traditional models of growth, like those of Harrod and Domar³, formulated even before those of Solow and Swan. Unlike the neoclassical tradition, growth models of the genre of the seminal Harrod and Domar didn't uphold in production function. Assume that the marginal return of capital may be constant and positive, not limited because of that factor accumulation and economic growth to a single trajectory.

In contrast to the neoclassical models, such seminal Zhukov demonstrated growth models right space for public policy intervention, the effects of which could alter the rates of savings and investments and thus raise or reduce the growth rates of the countries. According to Thirukodikaval Nilakanta Srinivasan and Bhagwati (1999), "even the steady state growth rate is sensitive to policy". This fee would not be determined by exogenous mode and could be intensified by generating "growth effects from trade policy". Different trade policies and, in particular, trade liberalization could therefore cause "dynamic" gains, raising the rates of economic growth in the long term (Thirukodikaval N Srinivasan, 1995). However, the success of the policies and their corresponding gains in growth would depend on favorable environment, which was not

³ For details see, Harrod (1939) and Domar (1946)

distorted by market failures. Thirukodikaval Nilakanta Srinivasan and Bhagwati (1999) argue that such failures can easily compromise the gains of trade policies.

The new growth theories relating the dynamics of endogenous growth of economies. Developed originally by Paul M Romer (1986) and Robert E Lucas (1988), these enhance the mechanisms anticipated by the seminal models and are capable of engendering sustained capital accumulation. Within the framework of these theories are determining the accumulation of human capital, innovation and technological diversification. In these cases, externalities are emerging as technology and human capital, as different forms of knowledge can be disseminated among agents, both within the firm, aggregated terms in the industry. The growth may converge and sustain the higher rates, provided they are the higher the rates of accumulation of knowledge applicable to production. The accumulation of knowledge is through education, learning, training of manpower and various activities of research and development (R&D) and technological innovation. Growth perpetuates endogenous manner insofar as the marginal product of capital, physical or human, remains positive, stimulating accumulation of knowledge activities, in different ways. Some models, based on these conditions, tend to show that FCI allow you to increase productivity and economic gains, through exports, foreign direct investment external debt and workers' remittances. Increased competitiveness through imports and exports, and the benefit of the use of scales, to meet external demands, can induce processes of accumulation of knowledge.

Grossman and Helpman (1991) argue that the human capital directly associated to R&D and can contribute to the creation of new intermediate goods and boost growth and

trade. However, as Baldwin (2004), in models such as Grossman and Helpman, "there is no definite answer to whether protection increases or decreases the growth rate. It depends on the pattern of imports and exports". Trade policy and others may discourage the production dynamic sectors, exporting, and potentially hinder the diffusion of productivity gains, including from the imports of intermediate and capital goods. To a large extent, the reaction of economies to liberalization depends on the structure of the economy, the economic pattern of its international insertion and executing policies in various fields, ranging from educational, scientific-technological and industrial to financial and macroeconomic.

Unlike traditional theories, the endogenous growth theories allow you to conclude that the foreign capital inflows and growth models nourish a dynamic of mutual causation, and the gains are no longer static. This dynamic is based on dynamic character of production, its diversity and dependence in innovative processes or human capital intensive, State intervention and public policies in favor of those processes can increase the dynamic gains from foreign capital inflows and growth and strengthen each other.

However, as concluded by Lawrence and Weinstein (1999) that this theory is actually ambiguous on the dynamic effects of foreign capital inflows trade. In some situations, could even the dynamics become counterproductive, generating lower growth and well-being. Therefore, according to argue Long and Wong (1997) vis-à-vis possible ambiguity and diversity of theoretical results, "on simple policy recommendations

should be made without a thorough understanding of the structure and the key features of the economies under consideration".

There are vast literature discuss the theoretical linkages between the foreign capital inflows and endogenous growth. The challenge of these models is to reconcile the processes of technological development and accumulation of capital (mainly human), own growth, with the processes of allocative and productive efficiency, as well as technological diffusion, which can be stimulated by international trade. C. I. Jones and Romer (2009), argue that the integration of foreign capital allow you to enlarge the scale of markets, production and, especially, the dissemination and absorption of knowledge and ideas. Thus, growth-oriented economies increasingly greater benefit would be the endogenous of globalization. The literature shows there are serious chances that externalities and trade growth to build up in countries that invest in the processes of induction of endogenous growth.

These investments, coupled with appropriate policies, they multiply the gains of foreign capital inflows. Lucas Jr (1993) indicates that, in some circumstances, the protection can allow the maturation of long-term comparative advantages, especially in high-tech sectors. Young (1994) shows how the protection of less developed countries and as subsidies to sectors of highest technology can also bring greater benefits. In these cases, the benefits of liberalization are earned only if it is subject to a prior sequencing of policies in support of infant industries. Similar argument would apply to intellectual property rights and the protection of these rights allow easing to technologically less

developed economies to mature their inventive capacity. Initially could prevail breeding technological activities, lower costs, but if the relaxation of protection is accompanied by set of policies, including increasing openness, economic environment could be stimulated more intensively innovation and technological diversification.

In fact, the foreign capital inflows can be income differences and inducer of growth among countries, depending on the position or relative slope of the countries. As the processes of accumulation is based on aggregation of intangible value, the basic policies (industrial, educational, scientific-technological) to induce these processes can weigh as much as or more than the allocations of resources and structural characteristics.

2.2.2 Foreign Direct Investment and Economic Growth

The existing literature on the relationship of foreign direct investment (FDI) and economic growth does not have unanimous results. Some of these studies point to the fact that the FDI generate economic growth from technological progress and the accumulation of capital, which increases the productivity of companies and, consequently, growth. However, other studies conclude that the FDI is not always assumed as a vector for growth. Indeed, the FDI can create barriers and lead to an inability to adapt national companies, having a damaging impact on the whole economy (with perverse effects on the level of unemployment, increase in the number of bankrupt companies and the loss of national sovereignty due to mostly presence of foreign firms instead of local firms).

Specifically, in developing countries, there are still many difficulties which affect the well-being of populations, due to the scarcity of financial resources, and the FDI is identified as a shape that can promote the resolution of structural problems found in some of these countries. The relevance of this scientific study seems clear, especially since the studies on this theme applied to the different income level countries are missing in the literature. Its usefulness extends eventually political decision-makers wishing to implement policies that promote economic growth.

The concept of FDI is associated with those foreign companies or foreign investors (in this case sender), which promote the creation or taking possession of a firm in another foreign location (in this case receiver), in order to perform their activities profitably, with a view to their control over the function of firm. The emerging or developing countries seek to attract FDI, since it assumes as an important source in the fundraising needed to solve structural problems and related to the well-being of the population, since in these countries, these financial resources are scarce. In this line of thought, the FDI is considered by several international, political and economic institutions as a generator of economic growth and a solution to the economic problems that is facing by developing countries (Mencinger, 2003).

In this sense, we can say that the FDI is a component that generates growth when countries use it rationally, that is, the result of their activities should be satisfactory for both transmitters and receivers. The issuing country must carry out a study in advance regarding the opportunities and threats in the country, decision of investment should be

based on the feasibility of the business, as well as the strategies that should be implemented in order to minimize the risk inherent in investing. This idea actually meets the economic theories that suggest that foreign capital flows, when allocated efficiently, they generate economic growth (Mencinger, 2003).

As Carkovic & Levine, (2002) argue that these multinational companies are thus an essential source of financial, technological and organizational resources for least developed countries. This type of investment includes the control of a company, or part of it, in a foreign country, being accompanied by creating employment opportunities, transfers of technical resources, knowledge, human capital development and many others ways. The key to distinguish the FDI in other ways of operation is that the company has a control over the assets of which are holding abroad.

If we take this aspect into account, easily understand that countries with weaker economies take the FDI as the source of growth and modernization of the economy (Carkovic & Levine, 2002; Ford, Rork, & Elmslie, 2008). Therefore, the receiver countries should ensure the business-friendly environment for the inflows of FDI in micro and macro perspectives, especially ensuring political stability to attract investors and to benefit from the advantages that these investments contribute to your country, in economic, social and political terms (Carkovic & Levine, 2002).

The estimates resulting from the Economist Intelligence Unit [EIU] (2014) point to the fact that the FDI have been increasing in recent decades and underline its growth in the

future. Thus, about 15% of FDIs are now focused on developing countries, which may be justified, in part, by the relocation of industrial activities and production of labour-intensive, particularly to China, since here are rates of return on investments usually higher than in developed countries.

In last three decades, the impact of FDI on economic growth is widely studied (Carkovic & Levine, 2002; M. E.-G. Lim, 2001; Sylwester, 2005), doubts still persist with regard to their effects, as well as what are the necessary conditions and resources that provide economic growth (Venkataraman N Balasubramanyam et al., 1996). In fact, even though several studies point to the positive effects of FDI, some authors underline the discrepancy of positions in relation to the degree of effects caused by the FDI in the country (Blomström & Kokko, 1998; M. E.-G. Lim, 2001). In a short, we can say that the FDI is a major source to formulate the gross capital formation, which can generate the growth of the developing countries.

In this section, we present some of the theories that have emerged in the explanation of the FDI, including the theory of monopolistic advantage, an oligopolistic behavior theory, theory of internalization, transaction costs theory, theory of location advantages and theory of product life cycle.

First of all we discuss the theory of monopolistic advantage, this theory focuses on the monopolistic advantages of Multi-National Corporations (MNCs). According to Kindleberger (1969) and R. B. Cohen and Hymer (1979), the existence of the MNCs

stems from the fact that these have some kind of knowledge or competitive advantage, of monopolistic nature, which allows them to compete with local companies, describing the specific advantages of the company as a manifestation of structural imperfections of the market and consequent existence of oligopolistic benefits.

Kindleberger (1969) stated that it constituted a necessary condition to the FDI, the market of goods and services were flawed or that there was an interference in competition on the part of the Government, given that local businesses would have advantages over the multinationals due to the proximity of the decision-making centers. Therefore, the structure of certain markets would determine the appearance of the FDI. From the perspective of R. B. Cohen and Hymer (1979), a company it is necessary to have some kind of financial advantage, technology, management, marketing or production to reduce or minimize the chances of failures in the new consumer markets.

In short, this theory argues that is the existence of market imperfections of products, economies of scale and to government intervention in markets, which feed the FDI. However, the weakness of not consider the factors that affect the choice of the location, nor the reason why companies choose the FDI as a mechanism of operation abroad and explore the so-called advantages of properties.

The theory of oligopolistic reaction is based on the assumption that the internalization of a company engaged in an oligopolistic market (being that she herself is oligopolistic also) results from the reaction to the internalization of a competing company. Knickerbocker (1973) the founder of this theory argue that when a foreign company

performs an FDI, other companies often exhibit imitative behavior, i.e. they follow the internationalization of competitors so that they will not lose their strategic advantage.

It is argue that oligopolistic firms seek stability, which is to maintain and consolidate a position in the oligopolistic market, both locally and internationally. Therefore, one of the determinants of FDI is the motivation of certain foreign companies follow the example of competing companies. Thus, the one major strategy of investing abroad is to generates a chain reaction among its competitors, since it seeks to maintain the balance and the same conditions between all participants of the oligopoly irrespective of market location, running the risk of not obtaining attractive rates of return and even get negative rates of return at least for a certain period of time.

It emphasizes that the MNCs produce more benefits resulting from diversification of investments that perform, thus reducing the risks of a downturn and negative environments on the market. Previous theories do not explain the reason why companies choose to explore their monopolistic advantage through the FDI and thus arises the theory of internalization that is based on the existence of gaps in goods markets and factors that may induce businesses to FDI.

Thus, among the projects developed around this theory include those of Buckley and Casson (1976) that underline the necessity of existence of four groups of factors so that this theory can be put into practice: (a) industry-specific factors, related to the nature of the product and with the structure of the external market; (b) specific factors in the

region, arising from his social and geographical features; (c) country specific factors associated with their political and fiscal relations and; (d) company-specific factors, which reflect the ability of management structures in organize an internal market. In this sense, the intermediate product market integration through the FDI, would enable the reduction of costs.

Therefore, the company develops a specific advantage in their home market, possibly in the form of some intangible assets (e.g., marketing or production management), which gives some advantage compared to other companies, including local companies. In short, the internalization of transactions, from the FDI, you can take on the best way to explore the intangible assets (e.g., knowledge) and transcend their own market imperfections. With the internalization can be avoided the imperfections and companies can expand their activities to other markets, thus reinforcing its advantages.

This transaction cost theory was presented by Coase (1937) and it states that transaction costs refers to the cost of providing for some good or service through the market rather than having it provided from within the market. This theory assumes an intention to justify the reason for a company to opt for FDI engine, instead of export or enter into contractual relations with the outside world, stating that this aspect results from the use of its advantages of ownership.

In fact, in the case where the cost of the transaction through an organization is smaller than the exchange through the marketplace, the company grows by internalizing the

market to the point of getting the benefits that its action to offset their costs, plus a better use of economies of scale and scope that reduce the cost associated with the transaction information, opportunism and uncertainty. In short, according to this theory, the unit of analysis was the transaction and the goal would be to minimize the transaction costs associated with each alternative that could be presented.

Under this theory of location advantage, the foreign company operates its activities where there are lower costs. In fact, the location factors are capable of motivating for the internationalization of the company in search of natural, technological or financial resources abroad, in order to better your value chain (Durán & Ubeda, 2001). Therefore, the location factors are conditioned by characteristics of the country of destination of FDI, by its prevalent economic system, for its cultural, social, political environment by the availability of resources in the country and by their own characteristics in the internal market.

For Instance, it is arguing that oil companies invest where there are oil reserves and, for their exploitation, combine their technical and management capacities with the local resources available (e.g., workforce, knowledge or progress in semiconductors and computers). However, from the perspective of these authors, the selection of location is not always as obvious, since there are a multitude of factors that influence the choices, namely:

- a) Some activities can generate increasing economies of scale, reducing substantially the cost through increased utility of quality produced. In this case,

there is an incentive to increase the scale of current operations and the achievement of an investment in new subsidiaries abroad.

- b) The production is not a single phase in the value chain, from what companies need to analyze their activities at the perspective of research and development (R&D) or marketing, looking for locations that minimize their costs. For example, we can say that the R&D might be better located in regions where there is more material used or skilled workers to do so. With regard to marketing, this integrates aspects such as the state of development and operation of distribution channels, limits and restrictions on advertising campaigns, price fixing, among others, which requires, necessarily, markets with particular and specific characteristics.
- c) Some companies can influence the prices of production factors in a given region, so will tend to locate their intensive production processes of these factors (or factor) at that location.
- d) It is still necessary to consider the impact of government intervention (e.g., through fares, taxes, fees, preferential duty), which influences the advantages of each location. The Governments of certain countries such as China, using trade barriers to encourage FDI to the detriment of exports.
- e) Finally, the work is not the only factor that must be taken into account. Although labor costs may be relatively low in certain countries, it is necessary to consider other aspects, such as the qualification and training of manpower available, since the lack of specific training will entail a cost in their training.

The theory of product life cycle suggests that some types of product undergo a cycle, composed essentially by four phases: (a) introduction; (b) growth; (c) maturity and; (d) decline. Therefore, in the first phase of introduction, firms can register small-scale exports to other countries; in the second stage of growth, firms can produce a total or partial relocation of production to foreign countries, where the cost of transport or customs barriers are sufficient to justify the decentralization of production; in the third stage, a particular aspect is the transfer of production to developing countries, in order to obtain certain advantages in costs and, in the last phase, demand grows in these developing countries, which is where he produces, mostly the product and from where exporting to developed countries.

This theory of product life cycle argue that when a foreign market is large enough to support local production, the foreign company performs investment, i.e. FDI. Summarily and given the perspective of Vernon (1966), we can say that the theory of product life cycle has present the advantages of the location of countries and its relationship between the production of certain types of goods, in each one of the stages of their life cycle, and the innovation of products would be an eminent condition, especially in countries with large capital and economic development.

2.2.3 Foreign Debt and Economic Growth

The debt of a country can be measured and analyzed in different ways. First it is important to define and separate the various types of debt that can be associated with a country. Debts relating to a country can be public or private. Public debts are, naturally,

those that are contracted by the State. On the other hand, private debts are those that are incurred by private entities (be they individual or collective entities).

The debt contracted by the State is usually referred to as public debt; they can be divided into internal public debt and external debt (also called for sovereign debt). The public debt is defined as the aggregate of all debts incurred by various organs of the State. The origin of the public debt is associated mainly to three factors: public spending on goods and services, spending on interest on debts previously and still derived from foreign exchange and monetary policies. In turn, the public debt can then be debt between domestic debt and foreign debt. The debt with respect to the internal part of the public debt which is composed of the debts contracted by the Government with national lenders. Such debts are usually contracted with the internal market, in particular by way of the issuance of debt securities. On the other hand, the external debt is the sum of the debts contracted by the Government with foreign creditors, be from other States, foreign banks, IMF, or any other type of entity.

However, there are several ways to "measure" the external debt of a country. Andini and Cabral (2012) argue that the external debt stands out mainly in terms of gross external debt, the international investment position and external debt. Gross foreign debt is the sum of total debt instruments from residents to non-residents, namely corresponds to the total foreign debt which is formed by public and private foreign debt. The international investment position corresponds to the difference between financial assets and liabilities of residents vis-à-vis non-residents. And, finally, the net external debt is equal to the

gross foreign debt minus the sum of total debt instruments of non-residents to residents. Reinhart and Rogoff (2009), define debt as being the total liabilities of a country (public and private) with foreign creditors, namely corresponds to gross external debt. On issues relating to debt crises the generality of literature turns out to follow this external debt definition. In this way, in accordance with most of the existing literature, this will also be the definition of external debt followed throughout this dissertation.

Among the existing literature a foreign debt crisis of a country corresponds to the non-compliance, or risk of non-compliance with the obligations of a country from its foreign creditors. Noting that a debt crisis can take two forms: (i) when the Government of the country needs to restructure its debt, or (ii) when the country's Government goes into default-total failure of its obligations. A debt restructuring is nothing more than a renegotiation of loan terms. Today many of these restructurings are performed with the aid of the International Monetary Fund (as an example we have the current case of Greece). Reinhart and Rogoff (2008) claim that these constitute a partial default. First, because debt restructuring often involve reductions in interest rates.

Secondly, and probably more important, is the fact that debt restructuring normally arrest investors with illiquid which are not renumbered for decades. This illiquidity is a huge cost for investors, forcing them to hold assets with risk, they often have compensations on much below market. On the other hand, the entry of the Government of a country in default is the extreme case of a debt crisis, translating a complete inability on the part of the country to comply with its obligations with creditors. It's

about this situation that the majority of existing literature focuses your attention. In addition to these two types of situation, amid the economic literature there are some studies that assume the existence of a crisis when a country uses a large amounts of loan money to international institutions.

Throughout this study, it shall be understood that there is a debt crisis in any of the situations described above. That is, when a country resort to a considerably high loan with the IMF, when a country is subject to a restructuring of its debt and when a country incurs a default situation. In order to meet the purposes of the present dissertation, first it is important to analyze the relationship between the rate of economic growth and external debt. The wide literature is available on the relationship between both variables. After the second oil crisis in 1979, all countries were affected by the big global recession between 1980 and 1983. The many indebted countries went through serious difficulties in relation to the management of their debts due to very high real interest rates and a very slow growth in industrialized countries. Since the 1980, there were numerous studies have been done to understand how this excessive debt affects the debtor countries, in particular by means of economic growth. However, among the various investigations, has not yet been possible to reach a consensus on the relationship between economic growth and external debt. The conclusions vary in function of the countries under study and depending on how the question is addressed.

The relationship between these two variables can be analyzed mainly by two perspectives of causal link i.e. either external debt influence economic growth or

economic growth influence foreign debt. Most of the existing literature focuses his attention on the first perspective, seeking to understand how the debt carries an impact on economic growth. However, the perspective that best fits with the study to develop in this dissertation is precisely the relation of causality – debt growth. However, then a review of the studies considered most relevant for each of the causal relationships.

The available literature does not provide any consensus on the impact of external debt on the economic growth. However, a good portion of the investigation found evidence of a negative impact, especially for excessively high debt levels. In theoretical terms there are several channels through which external debt affects economic growth, as for example, the channel of productivity, the channel of investment, capital accumulation, among others. There are various channels through which external debt carries an impact on growth, there were various concepts, definitions, models and hypotheses in order to systematize and explain how this impact is evident. The major theories related to explain the relationship between foreign debt and economic growth include, Debt Overhang Theory, Debt Burden Theory, Debt Relief Laffer Curve and the Crowding-Out Effect.

P. Krugman (1988), defines debt overhang as the presence of a debt "inherited" high enough so that the creditors do not hold hope of being fully reimbursed, which of course discourages investment, so a decline in economic growth. In practical terms this is a relatively simple concept that reflects the impact of debt on growth through the channel of investment. The hypothesis of "Debt Overhang" theory defines that the accumulated debt acts as a "tax" on future production, discouraging any investment plan you want by

the private sector or by governmental institutions, which reflecting a slow-down in economic growth.

Savvides (1992), in an attempt to study the possibility of debt overhang, conclude that excess debt combined with a decrease of foreign capital, presents a high negative impact on investment rates and consequently the rate of economic growth. The author states that if an indebted country cannot sustain its external debt, debt payments affect the country's economic performance, since a good part of the productivity is directed toward debt payments. Deshpande (1997) confirms the hypothesis of debt overhang and conclude that the external debt has a negative effect on the level of investment. The author states that since any increase in the production of the country is directly channeled to debt payments, investors obviously feel discouraged from investing. As a consequence of the decrease of the level of investment is of course a crisis on levels of growth of heavily indebted countries.

On the other hand, the concept of Debt Burden corresponds to the cost that is associated with the debt burden. That is, corresponds to the "maintenance" costs of debt, mostly associated with the interest that is paid. The higher the greater the debt burdens of same, and may sometimes become extremely difficult, or even impossible, to comply with the same. Therefore, this debt burden leads to increased difficulties for a country once any wealth, from for example of increased productivity, is directly channeled to the payment of debt service.

With regard to Debt Relief Laffer Curve, this represents a relatively simple theoretical model that reflects the relationship between the stock of debt and payment of creditors. For excessively high levels of debt any increased productivity/growth is directly channeled to the creditors. This fact of course discourages private investment and growth. If this discouragement is too high, all these debt charges may cause the ability of the country pay decrease. In short, for relatively low debt levels, an increase in the debt burden increases the flow of payments to creditors, but this relationship is reversed when debt levels reach a certain value. Figure 2.1 represents the Laffer curve for debt relief.

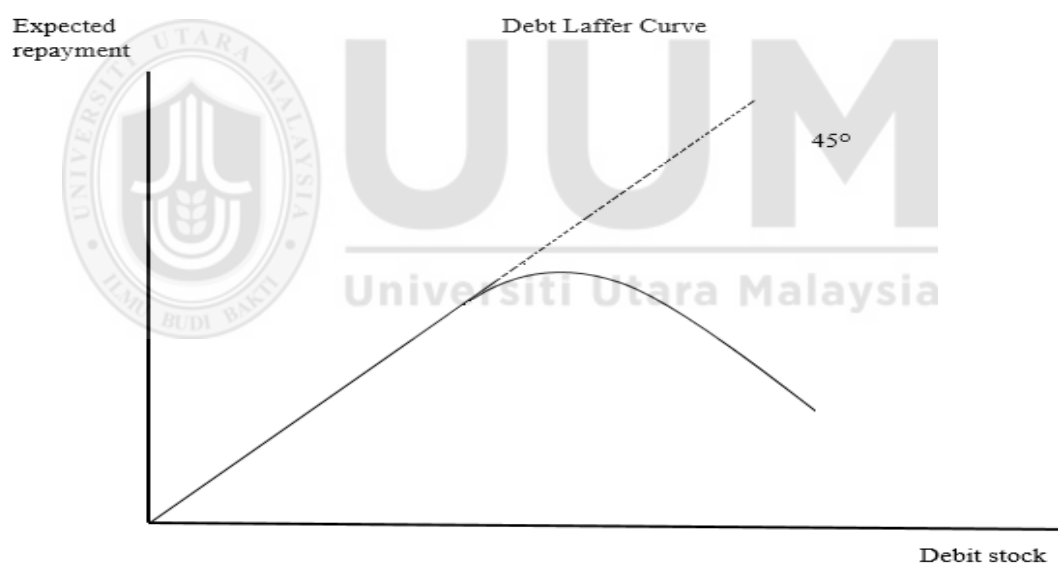


Figure 2.1 *Graphical representation of the Laffer curve for debt relief*

The left side of the curve is considered as the "good" side and the right side of the curve as the "bad side". Although in theoretical terms this representation is relatively simple, in practical terms determine the value that causes a country reaches the maximum point of the Laffer curve (considered the best balance point) is not at all simple.

Finally, we discuss a Crowding Out effect. In practical terms the crowding out effect happens when the increase in the spending leads to a reduction in levels of consumption and investment. This phenomenon is easily explained on the basis of the IS/LM model. The fact that a country adopting an expansionist policy and increase its expenditure, this need to acquire liquidity to the money market (which translates a displacement along the line LM), which of course it may reflect a rise in interest rates. Consequently, this event causes a contraction in consumption, given that the saving is more desirable because their salaries have been improved, and also the investment, once with the rise in interest rates financing on the part of companies is more expensive. Naturally this decrease, mainly in the investment level is reflected in the slowdown of economic growth.

2.2.4 Workers' Remittances and Economic Growth

Migrant workers' remittances are gradually becoming an important source of income for developing economies. Remittances are more important for economic growth because of its stable nature as compared to other external inflows of capital like loans, aids and FDI. The year of 2009 has reported more than \$440 billion of workers' remittances that was remitted using official channels.⁴ The last two decades have shown a positive trend in the workers' remittances. Though in the last five years, FDI has fallen drastically due to recession in the economies of many developing countries but the workers' remittances are increasing continuously. Even some developing countries have more workers' remittances than their FDI. Remittances by the migrant workers have played a crucial role in nurturing the economic development in the respective countries (Siddique et al., 2012). Remittances are said to be different from other foreign capital inflow like

⁴ Source: World Bank (World Development Indicators) 2010

FDI, loans and aids because these are of stable nature relatively (Shahbaz et al., 2007). On the other hand, remittances are found to be in a positive trend when the host economy suffers a recession because of financial crisis, political conflicts or natural disasters etc. as expatriates remit more during crucial time for so that they can support their nations accordingly (Siddique et al., 2012).

Studies also argues empirically the positive relationship between workers' remittances and growth of the economy (Azam & Khan, 2011; Faini, 2006; Fayissa & Nsiah, 2010; Jongwanich, 2007). More precisely, workers' remittances are found to be significant source of increase in investments and consumption in host countries. Such increase is the major signal of development in the economy and both can be increased by efficient usage of workers' remittances. Workers' remittances have been proved to be a source of alleviating poverty in developing countries (Imai et al., 2011; Jongwanich, 2007). Increase in workers' remittances also resulted in an increase in the private investments. In economic downturn and adversity, such remittances continue to increase and are found to be comparatively less volatile than FDI in those countries that have high marginal propensity to invest.

Since the developing countries are very much depending on such type of foreign capital inflows and therefore volatility in these inflows may affect the economic growth. These can be supposed to probably have significant consequences on growth in receiving countries. Remittances resulted in the accumulation of capital by direct increase in investor's funds and in the growth of physical and human capital of the host households.

On the contrary, it also increases credit merit of the local investor which results in decrease cost of capital in the country and when such cost decreases, consequences are increase in new investment borrowing. Simultaneously, remittances may expedite economic stability of the host country and make the economy less volatile accordingly. This subsequently resulted in reduction of risks in the host economy so that in order to increase investment (Jawaid & Raza, 2014).

The economic growth may have negative impact of capital inflows (remittances) in the host country which causes the decrease in labor force participation. This type of capital inflows may consider as transfer of income. Furthermore, this transfer of income may be beleaguered by stern moral hazard problem. In this regard, the recipients promotes to use alternate way of consumption and the labor market effort reduce accordingly (Jawaid & Raza, 2014). Remittances may affect overall productivity of the through the enhancement of effective investment which further change the eminence of remittance receiving country's financial intermediation. Considering remittance as capital inflow where the investment of remitter amount is invested, then the investment pattern is distressed due to drawbacks and informational benefits compared with local financial intermediaries. However, the quantity of funds may also increase through remittance in the banking system. Therefore, the financial expansion improve and the growth of economy is appreciated (Barajas et al., 2009).

Efficient sum of foreign exchange reserves is a necessary factor to pay the import bills whereas the gap in the foreign reserve are an important dilemma for developing

countries. It is to be noted that, remittances may be useful in strengthening the foreign exchange earnings specifically in the case of developing countries. Remittances inflows creates an opportunity to reduce the gap of foreign exchange reserves. In past, many empirical studies have highlighted this argument using panel and cross sectional data to explain the relationship between economic growth and remittances (Chami et al., 2003; Faini, 2006; Fayissa & Nsiah, 2010); and many more). Additionally, fewer time series empirical investigation has also been conducted in this manner (Azam & Khan, 2011; Karagöz, 2009; Waheed & Aleem, 2008). In this context, the relationship between economic growth and worker remittances were found to be significant negative (Chami et al., 2003; Jawaid & Raza, 2014; Karagöz, 2009; Tehseen Jawaid & Raza, 2012; Waheed & Aleem, 2008).

Some empirical studies also found the negative impact of workers' remittances on economic growth (Chami et al., 2003; Jawaid & Raza, 2014; Karagöz, 2009; Tehseen Jawaid & Raza, 2012; Waheed & Aleem, 2008). In 1974, one study of Becker's pointed out that migrant's remittances may not be considered as profit driven due to spending on consumption rather than investment in Pakistan. Another study of Kritz et al. (1981) signify that imports may increase through remittances in the country which further widen the deficit in balance of payment. On the same vein, Keely and Tran (1989) argued that remittances are the dangerous source of finance due to volatility in the migration of people which further diminish the foreign exchange reserves of the country. Sofranko and Idris (1999) continue this argument and further suggest that people use remittances for their daily use of consumption while the savings through

remittances may obsolete in this manner. However, remittances have compensatory nature and it is considered as idleness among recipients (Kapur & McHale, 2003).

2.2.5 Exports and Economic Growth

This section aims to review the main economic theories that can explain the relationships between trade and growth. In particular, assess the main contributions offered by trade theories and the theories of growth, in order to understand those relationships and, to the extent possible, the sense of causality.

In fact, the theories of trade and growth intermingle with the very origin of economic thought and Economic Sciences. Adam Smith and David Ricardo, among others, stressed the importance of trade to the wealth of Nations. They argued that the international trade component efficient and indispensable for the generation of greater wealth and increasing the welfare of countries. They anticipate the various factors by which trade acts as growth inducer and vice versa although at intuitive level. Smith considered the importance of economies of scale and the development of human capital for long-term growth among other factors.

Despite their common origin in economic thought, theories of trade and growth have become object of own scientific developments of their respective schedules, especially in the postwar period. Although using the framework of many hypotheses and common methodologies, theories of trade and growth are now taught separately. The theories of trade are studied as an extension of microeconomics, are still incipient and the models

that sought to give a treatment to trade within the macro economy. The theories of growth are, in turn, traditionally object of macroeconomics. Although has been intense and unusual effort to substantiate the macroeconomic models in microeconomic bases, the most striking growth models were typically designed in a closed economy, without economic relations with the rest of the world. The effort to integrate trade in the theories of growth is recent.

In the next paragraphs of this section, we discuss the main individual contributions of theories of trade and growth. Seeks to distinguish the traditional theories and visions of new theories relevant to the interrelationships of trade and growth. Finally, presents an overview of the possible theoretical consensus about these interrelationships.

Traditional trade theories are commonly classified in two generations: classical and neoclassical theories of trade. They mostly discuss the theoretical linkages of the "comparative advantages" of the trade. Traditionally, these theories emphasize the static elements of these advantages and thus contrast with the new theories of trade, seeking, to a greater extent, underline the dynamic character of these advantages.

Predominate among the traditional theories of general equilibrium trade models, which uphold efficient allocation of production, according to the benefits of trade and the maximization of the rights be among the economies involved. The models are derived from assumptions of perfect competition and constant yields production of scale. In particular, in the classical theory the marginal return of a factor of production remains

constant, while the neoclassical theories this becomes descending. The conditions of equilibrium of these models can be interpreted as applicable in practice in the long term.

These theories mainly discuss the development of trade, driven by trade opening, engenders economic gains stimulated by efficient use of comparative advantages. Trade liberalization between two economies may leads to greater technological allocation and efficiency and thus greater production and higher levels of well-being.

The comparative advantage theory of Ricardo is the most complete and widespread in view of a classical trade theory. Earlier, Smith had established an absolute advantage theory based on his theory of value and production. According to the theory, the countries earn income and welfare gains to maintain a situation of free trade among themselves. Each country specializes in some measure in the production and exportation of some goods, which produces these goods more cheaply in absolute terms as compared of its partners. The exchange of goods through exports allow countries to share the advantages of lower costs of production through absolute advantage that each has or has developed in one sector or another.

In bases similar to those of Smith, but elaborating on the role of labour force as main source of wealth, Ricardo formulated the theory of comparative advantage (Ruffin, 2002). He clarified that it is essential to domestic mobility of labour, which is the primordial and unique production factor. He argued that the necessary adjustments in mobility arise for an economy to obtain the benefits of trade liberalization. Based on this

requirement and in the event of balance of commercial accounts, demonstrated that a country, even if you have absolute advantages in all goods produced by him, could have comparative advantages in certain more durable than other free trade conditions. Under these conditions, your trading partner, although devoid of absolute advantages, could have certain comparative advantages. Ricardo (1817) concluded that the gains from trade depend not only on the exchange of goods produced at lower costs, but also use more efficient and globally full production capacities available in the countries. To this end, each country should specialize in property in that it is more efficient, in relative terms, regardless of whether countries that are even more efficient in these same goods. In short, a country even without absolute advantages you can obtain profit and also provide other to its partners in free trade situation, specializing in accordance with the comparative advantages.

Regardless of its simplicity, the classical theory contains a fundamental message that trade induces the specialization process that can become economies more efficient mutually with highest standard of production and consumption. The key to these efficiency gains, which may include some temporary economic growth lies in the average increase overall productivity of countries. As emphasizes Helpman and Rangel (1999), "The simple Ricardo model remains useful for thinking about issues of host nation, such as the effects of technological progress on patterns of specialization and the distribution of gains from trade". The job of the Ricardian model in the analysis of the facts can be very useful, although it requires caution. Absolute differences in size and

absolute differences in productivity among economies can limit their specialization based on the advantages of international trade.

May also lessen the intensity of this specialization other factors not included in general in the traditional theories, such as transportation costs and imperfections that hinder domestic mobility of production factors, in addition to their own trade barriers. Such factors and asymmetries between the economies may lead to partial specialization, with a tendency to more specialization in certain countries than in others. This is why we find countries producing a wider variety of goods than others. The trend toward specialization is driven by trade and by opening that induces, but these are not sufficient conditions to change the structure of economies.

Neoclassical theories of trade succeed in demonstrating that international trade is the result of separate appropriations of production factors between the countries. The neoclassical theories of trade were originally developed in articles of Heckscher (1919) and (B. Ohlin (1933); B. G. Ohlin (1924)) and formalized definitively by (Samuelson, 1948, 1949) and (R. W. Jones, 1956, 1965). Designed for the systems of two economies, two goods and two production factors, the Heckscher-Ohlin models were largely extended and generalized to multiple goods and factors, since (Vanek, 1968).

Neoclassical theories differ from classical theory in the formulation of comparative advantages. In classical theory, such advantages originate from technological differences or, more precisely, of labour productivity. Within the framework of

neoclassical theories, resulting from differences in allocation or relative abundance of factors. The neoclassical theories fail to take a production factor, as in the Ricardian model, and they take two or more factors of production. The Cobb-Douglas production function⁵, which enforces inter-sectorial differences and allocation of income distribution in the countries.

The results of the neoclassical trade models derive the convergence of prices of goods produced by trade liberalization. Considering hypothetical identical technologies, countries specialize in the more intensive goods available factors in greater abundance, in comparison with its partners. Within each country, holders of the most abundant factors are most benefited by open trade and specialization, implying that inter-sectorial differences in the distribution of gains from trade. Within the framework of neoclassical theories were established important theorems about price adjustments. These can be grouped in order from the least restrictive:

1. **the price insensitivity of factors:** demands for factors are infinitely elastic in a small open economy
2. **equality of prices of factors:** the countries that produce the same set of products, with the same technologies and the same products prices should have the same prices of factors, besides having identical proportions of factors in production
3. **the price of convergence of factors:** the elimination of trade barriers between two countries leads, through the equalization of prices of products,

⁵ It is mathematical function usually employed to represent the production as with diminishing returns for each of two or more factors employed. The function takes the name of American economists Charles Cobb and Paul Douglas.

the elimination of differences between prices of factors, i.e. the so-called "equalization" of price factors

4. **Stolper-Samuelson theorem:** a rise in the price of fine intensive on a particular factor causing the increase in the price of that factor and the reduction in the price of another factor.

According to the hypotheses (not extreme) generally employed, the models result in gains of trade. Those gains, however, are invariably static in nature, without which the current elevation of trade determine the continuing increase in the level of production and income. Under these conditions, for example, the generalized reduction of import tariffs of certain country or between countries can produce gains in production and income in the countries involved in the import and export, but not indefinitely. Once exhausted the possibilities for elimination of trade barriers, tariff and non-tariff, no longer would expand production gains and income derived from international trade.

These gains can be considerably unequal between agents and economic sectors, depending on the relative abundance of factors in each country and how are these agents and sectors dependent on these factors. Aware of the implications of income inequality, several economists, like Deardorff and Stern (2002), they propose that, to obtain the possible gains, trade liberalization should be conducted with a certain gradualism, so that they could be smoothed in time the consequential adjustments: "in the long run, with some mobility across groups in the population and with some government

programs that permit the population as a whole to share in the country's income', most people can expect to be better off with trade than without".

Traditional theories predict positive relationship between trade liberalization and expansion of economic activity. The gains from trade are expressed in a leap of income and a high level of well-being. The impact of trade liberalization are not always the same for each group and period. It can be higher in the initial stages but reduce in the prior periods. It can be said that the gains from trade liberalization are static, no precipitating dynamic effects, meaning a permanent high growth. As emphasize Lawrence and Weinstein (1999), "while traditional trade theories provide strong arguments for reducing trade barriers, these are essentially seen the one-time gains. Once these gains have been achieved, this theory has little to tell us about future performance".

Another limitation of the traditional theories, in particular neoclassical theories, emerged from its empirical dispute. Recorded in 1954, the paradox of Leontief⁶ illustrated well the inadequacy of theories against the facts: despite being a country more abundant in capital than in work, the US was relatively more goods specializing in intensive work than in capital. In addition to being able to arise from measurement problems, the paradox would refer to consideration of a greater number of production factors, such as

⁶ The paradox is named after the Economist Wassily Leontief (Nobel Prize for Economics in 1973), who sought to empirically test the Heckscher-Ohlin model. Leontief showed that, although the US were (in relative and absolute terms, compared to its partners) more abundant in capital than in work, their exports had a proportion of capital in relation to work lower than its exports. Such a situation would be paradoxical in light of that model. Unlike their comparative advantages, the USA would have been specializing in the production of less intensive goods relatively abundant factors in the country.

human capital, and the examination more detained differences technology, rather than the international distribution of the factors. In other words, suggests, at a minimum, a broader approach within the set of traditional theories, loosening the interpretation of its most original and striking features, or even the search for new approaches to deepen the technological content, in line with the Ricardian theory.

Neoclassical theories have been further frontally challenged by intensification of intra-industry trade, i.e. the exchange of similar goods, produced on the basis of similar composition factors. This exchange became the main source of expansion of international trade, to the detriment of trade inter-industry commands. Neoclassical theories predicted that the countries goods produced in different sectors, produced with a differentiated composition of factors. The predominant phenomenon of world trade recedes because of the traditional theories hypothesized pattern. This detachment became especially higher in relation to neoclassical theories, being defendant the deepening of technological differences. The traditional paradigm would be still far to explain fundamental questions such as the forces that induce countries to have different capacities and generating technological innovations (Helpman & Rangel, 1999). All these limitations effectively motivated the new theories of trade and growth.

The new trade theories are characterized by anticipating the so-called economies of scale. Absent from conventional theories, economies of scale may be caused by technological factors and market structures. Typically, these factors complement each other. Essential to these theories, are common also to the theories of endogenous

growth. Technologies that allow increasing economies of scale ensure favorable conditions of competition to firms that hold. In General, there are two types of structures models of imperfect competition: (a) monopolistic competition, supported by consumer preference to variety of products; and (b) strategic market balances, for example, in the form of duopoly.

The new theories of trade were initially drafted, between 1978 and 1985, in seminal articles of Krugman (1979, 1980), Helpman (1981), among others developed in extensive and rich theoretical body. Its evolution can be classified into three generations or aspects: (a) intra-industry trade; (b) strategic trade policy; and (c) new economic geography.⁷

The new theories of trade replaced the assumptions of perfect competition for alternative hypotheses of imperfect competition, as a basis for functioning of the markets. Made economies of scale or increasing income scale, instead of constant income. These new hypotheses had been broadcast, with solid microeconomic rationale in organization studies of industries, notably in the frame of the model of Dixit and Stiglitz (1977). Similar theoretical approach was inspired, on the one hand, of the seminal contributions of Joan Robinson and Edward h. Chamberlin, respectively in "The Economics of Imperfect Competition" and "The Theory of Monopolistic Competition", both published

⁷ In General, the new economic geography is classified, perhaps correctly, as distinct from theories that became known as New Trade Theories, but is classified in this work as part of the new trade theories. After all, the new economic geography can be seen as an extension of previous generations, being fundamental to all their common attributes, but in contrast to the traditional theories.

in 1933. On the other side, dating back the arguments previously made by Adam Smith, Alfred Marshall and Bertil Ohlin.⁸

The new theories of trade were motivated by the long expansion of world trade in more intense rhythm that the world product and, above all, by the concentration of this expansion in intra-industry trade, since the first decades of the postwar period. Similar exchanges intensified especially among advanced economies, characterizing the economic North-North pattern of commercial relations. Between exports such economies, which accounted for 38% of global exports in 1953, began to match the 76% of these flows in 1990. At the same time, there was a considerable increase of the share of intra-industry trade, becoming the biggest responsible for the expansion of the total trade between these countries (OECD, 2002).

Intra-industry trade is measured in the literature by index developed by Grubel and Lloyd (1975). This calculates the proportion of the trade chain that corresponds to the intra-industry trade. The less concentrated exports and imports in sectors or different products, the higher is the index. Your maximum level would be 100%, in which case all trade be practiced among the same productive sectors or by the fair exchange of goods equivalent, although differentiated. The index rises as it strengthens the ability of the country indiscriminately import and export goods within the same sector. Reduced when the country begins to focus on a set of goods export and import in another set of goods. The index can be calculated for different levels of disaggregation. In practice, to

⁸ Grossman (1993) provides summary of theoretical and empirical contributions that subsidized the development of new theories of trade since Ohlin (1924).

raise the degree of disaggregation, reduces the index. This can still be applied to the entire chain of trade in goods or its subsets, for example, only for trade in goods processed industrially (discounted primary products) or even more restrictively for manufactured goods (excluding primary products and semi-manufactured goods). To constrain the subset of assets in favor of those with higher added value, tends the index rising in practice especially among advanced economies, for which it has been most frequently applied (OECD, 2002).

The expansion of intra-industry trade reflected the growing industrialization of the global economy and the internationalization of production chains. Prevailed especially in trade in manufactured goods more sophisticated, as in mechanical industries, pharmaceuticals, chemicals, and machinery and equipment. For the OECD countries, intra-industry trade in these segments is around 70%. Contrasts with the exchange of goods from industrial simpler transformations, such as food processing, whose intra-industry trade remains structurally lower level, close to 40%.

Intra-industry trade strengthened the relationship between exports and imports and pointed to the potential complementarity of these as an engine of economic dynamism. Among developed countries, the most benefit of this expansion are the most developed industrially. The size of the country, industrial development, economic openness and trade integration of productive chains with the rest of the world seem to determine the plot and the progression of intra-industry trade. If, in the first place, were the economies the most advanced benefited, they knew, then achieve equivalent results the newly

industrialized country – known as NICs (Newly Industrialized Countries).⁹ Certainly, the relative excellence of Japan, which is not the case in other NICs, can also be explained as a function of the size of its economy, in addition to its mercantilist profile history.

Intra-industry trade came to represent an economic North-North pattern, contrasting sharply with the North-South intra-industry trade. The latter joined more markedly traditional trade theories, especially neoclassical theories based on differences in allocation of factors (Heckscher-Ohlin model). This radical change in the patterns of economic trade demand a considerable redesign of the theories of trade. As emphasized P. R. Krugman (1994), "Both the direction and the character of international trade seemed to suggest that not all exports were like Brazilian coffee".

The new trade theories are so realistic that consumers have preferences for various products, even though belonging to the same industry. So, can the countries specialize in the same industry and not necessarily in separate industries, which require different relative proportions of factors of production? Enough for both to come on stream, with gains of production scale, and these goods are marketed in imperfect competition. Under these conditions, the inter-firm trade shall represent a new trade pattern. Are reduced contrasts of North-South trade pattern, in that certain countries (North) take on the role of exporters' net of capital intensive goods (physical and/or human), and other (South), net exporters of land-intensive goods and/or less qualified labor.

⁹ Based on data available until 1990, Krugman (1995) comes to identify originally six super trading economies (Belgium, Singapore, Hong Kong, Malaysia, Ireland and Netherlands), between advanced economies and NICs, which are characterized by extraordinary expansion of intra industry trade.

Unlike traditional theories, the new theories need not posit differences in endowments of factors, even of different technological levels between countries. International trade occurs regardless of these differences. Countries with the same composition of factors and with the same technological level can specialize in the production of industrial goods differentiated, although similar and within the same sector or industry. This attribute corresponds to the economic pattern of trade more prevalent in the last decades of the 20th century. About North-North pattern intensifies between economies increasingly technologically advanced and industrial. Stepping through this process so very fast, China currently has a manufacturing trade mostly intra-industry, convergent online with most advanced economies and dissonant with most developing economies.¹⁰

As traditional theories, the new theories account for commercial expansion can follow the increase of income and of total production. They add that such positive relationship occurs especially in sectors which are more likely to innovation and differentiation of products. It is known that precisely those sectors experiencing higher growth and opportunities for trade in General. Although building a framework closer to the joint determinants of trade and growth, these theories, from a purely formal point of view, not necessarily ensure that the gains of growth will be permanent, beyond a certain income level elevation and well-being from the trade. Overcoming temporary gains remains dependent on external factors that induce sustained growth, as technological development. However, indicate that the dynamism of international trade, dominated by the inter-industry interchange lies in capabilities of innovation and productivity of the

¹⁰ Van Marrewijk (2008) and Van Biesebroeck (2010) study in-depth the evolution mode intra-industry trade in China.

economies. At the same time, they can potentially more benefit from this dynamism in countries which strive to improve these capabilities, rather than merely take advantage of the comparative advantages presented, such as longer automatically derived from the endowment of natural resources.

Strategic trade policy conforms as set of policy recommendations that derive from the new trade theories. Is faced with the proposed free-classical and neoclassical theories of money changers. Essentially, the new theories can justify government intervention via, for example, tariffs and other barriers to imports, incentives and export subsidies, innovation, research and development. Similar forms of intervention may allow the necessary investments for the emergence and consolidation of companies in sectors more technologically developed, which operate in an environment of imperfect competition and increasing yields with possible scale. Thus, the new theories also attach particular importance to the economies of scale that can derive from internal investments in innovation, firms external to firms as well as in the areas of education and scientific and technological training.

It is therefore not only a reinvigorated former reissue argument in favor of protecting and encouraging the domestic industry, but also a theoretical coup in traditional currents favoring the automatism of free trade. Furthermore, such a blow if operates in solidly grounded in economic theory bases, weakening neoclassical assumptions that led to a remarkably static vision comparative advantages. As P. Krugman (1987) asserts, "free trade is not old, but it is an idea that irretrievably lost its innocence. It can never again be

asserted as the policy that economic theory tells us is always right ". To elaborate on the implications of the ideas contained in Strategic trade policy, P. Krugman (1987) notes that "government policy can tilt the term of oligopolistic competition to shift excess returns from foreign to domestic firms (...) should favor industries that yield externalities, especially generation of knowledge that firms cannot fully appropriate ".

Katz and Summers (1989) advocate there are imperfections or slicers in labour markets that are associated with human capital externalities in the process of adding value. These imperfections and segmentations have role analogous to document by new theories of trade for goods markets. It would therefore be important job qualification monopolistic income-inducing, originally assigned by new theories to firms that diversify products or processes. In this sense, could be formulated policies able to develop and stimulate the formation of skilled labor, able to raise productivity and wages, particularly in dynamic industrial sectors. The largest exporting sector specialization in these sectors would lead potentially to higher income and welfare gains.

Thus, the new theories indicate that certain governmental interventions can empower the country to obtain greater benefits of international trade. This indication becomes especially valid in a scenario where the demand and global trade – especially in industries characterized by imperfect competition and scale economies – tend to expand at higher pace of economic activity, as in fact happened over the past five decades. In this sense, Strategic Trade Policy could leverage growth gains through greater benefits of expanding trade and induce domestic conditions more conducive to innovation and growth support.

However, Strategic trade policy does not indicate, in practical terms, how should be formulated the planning of the governmental interventions in time and inter-sectorial, with the corresponding impacts on the upstream and downstream production. It is recommended that policies minimize discriminatory effects between sectors and thus if targeting for adding value and generating externalities can be disseminated more widely in the economy. There would be serious difficulties, empirical techniques, to implement the economic and political strategic trade policy in a systematic manner. Requires appropriate maturity, technical capacity and political sophistication, in various private and public resources involved, in order to avoid governmental interventions and stimuli inducing excesses and distortions. The political economy of trade is not free, so the risks of to focus greater benefits among certain groups of interest, to the detriment of collective goals that can be pursued by public policies. Furthermore, the choice of sectors and companies' winners can compromise the State with a participation continued excessively and sometimes misplaced in "international trade wars" of interest more private than public. As P. Krugman (1987), "The well-justified concern of economists is that when policies affect income distribution, the politics of policy formation come to be dominated by distribution rather than efficiency".

Formulated by Fujita, Krugman, and Venables (1999), the new economic geography can be understood as an extension of the new trade theories. Several of its thematic aspects were already present in works that helped shape the economy of urbanization or Spatial Economics (von Thünen, 1783-1850). The backward and forward linkages inter-sectorial and inter-market were emphasized in the 1960s, in particular in High

Development Theories of Rosenstein-Rodan (1943), Fleming (1955) and Hirschman (1958). However, as discusses P. Krugman (1987), these works did not constitute economic theories in the modern sense. Were concepts and guidelines, without constituting economic models able to explain qualitatively and quantitatively the phenomena in question, as the location of production and trade.

The new economic geography seeks to design the production and trade in the spatial dimension, as suggested by the term geography. Thus, shall provide the new theories of trade in additional attributes to approximate these potentially of an understanding of trade as an integral aspect of economic growth.

The new economic geography is based on the same essential assumptions of new theories and adds important elements before neglected, especially by traditional trade theories. Between these elements, are: (a) transaction costs in space, in particular transport costs; (b) the size of the savings or the scale of markets; and (c) the vertical production chain – upstream and downstream.

The introduction of physical transaction costs corresponds to a realistic adjustment in models of trade. Indeed, the so-called gravitational models have estimated empirically adverse role transport costs in the expansion of international trade. Such expansion tends to occur comparatively between nearby economies or with transport connections to lower costs. The interactions between transport costs and scales of the markets, on the one hand, and increasing income and imperfect competition, on the other hand, generate

processes of accumulation and production specialization, as well as spatial concentration of industries and markets.

These processes tend to strengthen each other dynamically, through backward and forward linkages. Understand including cumulative processes of wealth that make progressively wider potentially benefits earned by lower transaction costs and greater ranges of goods and market factors, combined with externalities, product diversity and monopolistic competition. Rising incomes and vertical chains of agglomeration forces induce production and expansion of markets for final goods and intermediate and markets for factors such as capital and labor, these increasingly specialized and qualified.

After indicating several differences between traditional theories and new theories, it becomes hard to argue in favor of the existence of a solid and unequivocal theoretical consensus about the interrelationships of trade and growth. However, the theoretical diversity today observed allows, more than before, identify a set of principles or analytical foundations, which, if well applied to reality, can better capture the complexity of the matter.

Trade theories were built so excessively, not statistical incorporating enough dynamism for the production, investments and capital accumulation. Must be viewed with caution, especially when they interpret the empirical models of them inspired, as inter-country regressions (cross-country regressions) and regressions in countries Panel (panel data).

Follows the most fundamental lesson of the traditional theories that countries specialize in pursuance of the international market, external demand and the comparative advantage in labor-intensive goods predetermined factors that are more abundant. Typically, trade emerges as an economic pattern with cross-sector North-South, in the North is more abundant in technologies, physical capital and, increasingly, human capital.

Traditional theories emphasize the long-term benefits of open trade, enabling countries use more intense and efficient of their technological capabilities and their commitment factors. Certainly, stimulated by trade, similar use is potentially growth-inducing. However, it does not guarantee sustained growth benefits, i.e., necessarily higher and sustained growth rates. In short, the static aspect of theories does not allow growth gains be dynamic.

In a world increasingly marked dynamically by the accumulation of human capital (in the forms of education, training and research and development) and the technological innovation of products and processes, multiply the imperfect segments of markets in goods and factors. At the same time, widen the possibilities for expansion of production and of horizontal and vertical integration of the markets with greater gains of scale and externalities. In this context, the traditional theories of trade and growth become increasingly limited. The precepts of free trade from these theories do not allow the planned formulation of policies or business strategies, especially for developing countries, although it might indicate some advantages and disadvantages, opportunities

and challenges. Thus, they lack the traditional theories of ability to identify dynamic forces of trade and growth. The new theories of trade and endogenous growth are key to both.

Under the new theory, the fundamental forces of growth and of the possible benefits of trade would reside in the accumulation of human capital, technological innovation and, subsequently, in productivity gains and diversification of production. The growth of trade gains will be bigger or smaller depending on these forces, and not the comparative advantages that are solely or automatically by external demand pressures. Countries should understand the implications of comparative advantages and seek to go beyond predetermined them. Should therefore nurture dynamic comparative advantages, which depend on the development of educational, technological capabilities and inventive. It is in this sense that the teachings of the new theories of trade and endogenous growth become complementary and more fundamental than the traditional theories.

Technological development, diversification of goods and processes and the consequent expansion of intra-industry trade of goods with high added value increasingly strengthen endogenous potential for growth and commercial dynamism. Within the framework of the new trade theories, of the new economic geography and endogenous growth theories, there would be space for countries to find policies that can maximize the benefits of trade and growth and their mutual relationship in virtuous circle of inter-causal dynamics. The final question concerns how to formulate such policies, knowing that each country reveals both a singular economic structure, international insertion

conditions also vary. Liberalization does not guarantee earnings growth, and may even be harmful. On the other hand, properly combined to a strategy of efficient accumulation of human capital and productive capacity and inventive, the opening allows you to extend the gains of this strategy to the extent that warrants the use of a greater range of markets, production and, especially, for dissemination and absorption of knowledge and technologies.

However, as for this work, treatment argue integrated trade and growth must also seek the incorporation of macroeconomic and financial variables that affect them dynamically. These variables reflect dynamics that operate beyond the structure of economies, for example, in response to conditions under which an economy enters internationally, by virtue of national options and/or external factors. Although in general the latter exogenous have an impact on the economy in question. Of course, the intensity and shape of this impact can depend on the economic structure and national options. An example of this are the impact transmitted by external imbalances, especially in countries with low savings. These imbalances affect recurrently sustained growth of developing economies. Are indicative of the excessive volatility of capital or excessive exchange rate movements misaligned. Excessive changes in relative prices and the costs of internal financing.

2.3 Empirical Studies

In this section, we discuss the different empirical results of past studies related to the relationship of economic growth and foreign capital inflows i.e. foreign direct investment, exports of goods and services, workers' remittances and external debt.

2.3.1 Foreign Capital Inflows and Banking & Currency Crises

There are many studies available as a contribution of both theoretical and empirical work to understand the determinants and influences of financial crises on different economies. The most of the studies discuss the two broader type of determinants and influences, namely the direct measure of the financial account position and its drivers and secondly to analyze the influence of risk of financial stability directly or indirectly via the impact on the structure of financial account.

Mendoza and Terrones (2008) and Jordà, Schularick, and Taylor (2011) analyze the influence of excessive credit growth in generating the financial instability at the country level. They argue that credit growth can induce financial fragility in the presence of collateral constraints, as increased in the leverage risk leads to decline in the default rates of private firms and households, which in turn, directly affect the insurance and banking sector¹¹. Financial collaboration can also increase the risk of financial crises. However, financial openness provide more efficient allocation of capital¹², it may expose countries to increased collaboration risks through debt (Bolton & Jeanne, 2011) as well as to boom-bust cycles through asset-prices bubbles and surges and sudden stops

¹¹ See, Ahrend et al. (2011) for details.

¹² For more empirical evidence see, Henry (2007)

in capital flows (Furceri, Guichard, & Rusticelli, 2011; Outlook, 2011). In contrast, stronger macro prudential policies may decrease the risk of systemic banking crises. For example, tighter prudential regulation and supervision of the banking sector may lower the risk of financial instability (Ahrend, Arnold, & Murtin, 2011). Moreover, capital controls that carefully distinguish between different forms of capital flows may skew the composition of external liabilities towards safer forms of finance and thereby make emerging economies more robust to external shocks (Blair, 2007; Jeanne & Korinek, 2010; Korinek, 2011).

The excessive reliance on external debt instead of state-contingent assets (e.g. equity) is also concluded as a main reason behind the financial crises (Kenneth Rogoff, 1999; KS Rogoff, 2011). The external debt require regular payment of debt amount and debt services regardless of the financial situation of the borrowers, which leads to financial distress in the economies (Blair, 2007). Moreover, the debt inflows are more unstable than the FDI inflows (Duttagupta, Bluedorn, Guajardo, & Topalova, 2011; Kose, Prasad, Rogoff, & Wei, 2006). However, Tornell and Westermann (2005) point out that in many emerging economies most of the bank lending to the non-tradable sector finances relatively small projects and can hence not be replaced by FDI or equity inflows: to the degree that such domestic debt needs external financing, international debt would hence be necessary for realizing the growth potential of these economies. This notwithstanding, there is compelling theoretical and anecdotal evidence on the risks to macroeconomic financial stability connected with external debt finance. In contrast,

as underlined by Faria, Mauro, Lane, and Milesi-Ferretti (2007), there is no or little solid empirical evidence on the issue.

The maturity of debt is also considered as a main reason behind the financial crises in developing economies.¹³ At the macroeconomic level, Rodrik and Velasco (1999) and Radelet and Sachs (1998) find that higher short-term debt is correlated with a higher probability of large capital-account reversals. Such a correlation, however, could also reflect that a deteriorating financial situation may force countries to borrow increasingly short term, implying that short-term debt would be a coincident indicator rather than a cause of pending financial instability. A larger share of short-term debt may also be associated with a bank funding structure that increases vulnerability to “Northern-Rock type” wholesale funding runs.¹⁴ However, the higher liquidity risk associated with short-term bank debt should be weighed against its lower costs and other advantages of short-term debt. For example, Huberman and Repullo (2014) show theoretically that short-term debt could be socially optimal to avoid moral hazard and excessive risk taking by debtors. The need to roll over the debt would act as a disciplinary device that restrains borrowers from unduly increasing their exposure to risk at the potential expense of their creditors.

However, Bleakley and Cowan (2010) fail to find any empirical evidence of a relationship between firms’ short-term debt exposure and their probability to default

¹³ See, Jeanne and Zettelmeyer (2002) for details

¹⁴ During such a wholesale funding run, providers of short-term financing stop rolling over their credits because they expect the bank to fail. Similar to classical bank runs (Diamond and Dybvig, 1983), such sudden refusals of financing can result in a failure of the attacked bank, with expectations of failure becoming self-fulfilling.

during sudden stops. The currency composition of a country's external position is an important determinant of the capital gains and losses that result from exchange rate movements (Lane & Shambaugh, 2010). Unless countries, local firms and banks are properly insured, such shocks may have destabilizing consequences for them (see Eichengreen, Hausmann, and Panizza (2007), who also survey the literature on currency mismatches). Different types of financial vulnerabilities are highly interdependent. For example, the share of debt in external liabilities and currency mismatch measures are often strongly correlated as FDI and equity inflows are mostly denominated in domestic currency whereas debt instruments may carry exposure to foreign currency.

Speaking in financial crises, it is inevitable not to refer to other crises, because all are related somehow. This situation occurs in the literature developed over the years, because much of this literature focuses on the study of currency and banking crises, referring only the financial crises as a result of the previous (Bernanke, 1983; Calvo, 1996; S. Edwards & Vegh, 1997; Haubrich, 1990; Hoshi & Kashyap, 2004). Therefore, to understand the behavior of the currency and banking crises, better functioning and behavior of financial crises.

In studies by the beginning of the 20th century, banking crises were the basis for the research and study of the crises (Bernanke, 1983; Haubrich, 1990). With the great depression of 1929 and subsequent bankruptcy of big banks around the world, from this and other banking crises that followed in the Decade of 90, also studies relating to these

crises if they were developing and deepening. Two examples of crises that contributed most to these studies were the cases of Finland and Japan.

Between World War II and the early 90 there was a period of relative economic and financial stability, occurring only a few isolated financial crises. This environment of economic and financial stability was favorable to economic growth, which allowed a better control on inflation and capital flows. Akerlof, Romer, Hall, and Mankiw (1993) argue that not only developing countries but also the developed countries like the United States faced financial weakness due to instability in the banking sector and ineffective regulation following the financial liberalization.

At the beginning of the Decade of 1990, Finland and Japan were affected by serious bank crises. In the case of Finland, the devaluation of assets resulted in the slowdown of the economy, which led to severe crises in the banking sector (Drees & Pazarbasioglu, 1998). As for Japan, the collapse of the asset price bubble has led most banks to the State of insolvency (Hoshi & Kashyap, 2004). Also the so-called Tequila Crisis of Mexico was a combination of a weakened banking system, debt denominated in dollars and political shocks, which led to devaluation of the currency and a deep financial crisis (Calvo, 1996; S. Edwards & Vegh, 1997).

In the study of Balino et al. (1999), the evidence that the financial weakness could harm and influence the behavior of an entire economy, was demonstrated in the crises in East Asia in 1997, during which the decline of asset prices, has led these countries to high

economic growth, the encounter and facing an economic decline. Banking crises are usually related to financial liberalization, international shocks, Exchange schemes, structure of the banking industry, institutional and political environment. According to Gerard Caprio and Summers (1993) and Stiglitz and Uy (1996) financial liberalization can lead to greater financial weakness, for they get the banks to find more opportunities for risk-taking. The limited liability company, a settlement ineffective or inefficient supervision, can often lead to increased economic fragility of a country (Balino et al., 1999).

Mundell (1961) argues that, in the case of flexible currency regimes, tends to stabilize the financial system and real economy shocks tend to slow down, which also allows to avoid the increase of credits through the over-borrowing in foreign currency (Eichengreen & Hausmann, 1999). The system of fixed exchange rates may be more conducive to runs on banks and, consequently, the occurrence of financial panics (Eichengreen & Rose, 1998). On the other hand, Eichengreen and Rose (1998) consider that a foreign exchange commitment can reduce the likelihood of banking crisis and discourages risk-taking by banks. It is argues that the fixed exchange regimes tend to decrease the likelihood of a crisis, but if the crisis is already taking place the fixed regime may cause higher costs.

Of the few studies in which it is analyzed that the effect of banking crises in the economy, Lindgren, Garcia, and Saal (1996) who argue that the fragility and vulnerability of the banks negatively affect economic growth. In studies on the relationship between the behavior of the currency and banking crises. It is argues that

what gives rise to bank crises are balance of payments problems. An external shock, along with a rise in interest rates and a commitment to fixed parity, may result in the loss of reserves and the consequent occurrence of the credit crunch. This may lead to an increase in bankruptcies and consequently could trigger a financial crisis. Also Mishkin (1996) argues that when there is a devaluation of the currency, the banks are in a weakened position, if most of your responsibilities are denominated in foreign currency. Velasco (1987) argues that problems in the financial sector lead to the collapse of the currency.

G. L. Kaminsky and Reinhart (1999) concluded that the occurrence of a banking crisis increases the likelihood of currency crisis. This situation leads to the possibility of existence of vicious circles, which implies that the so-called "twin crises" are more severe than the currency crisis or the banking sector. The origin of these "twin crises" may be similar or even common with the deregulation of the financial system, which sometimes accompanies the aforementioned financial liberalization.

In recent years we have been witnessing the increasing occurrence of currency and financial crises, both in less developed and developed countries. The countries have become more vulnerable and not able to predict currency collapses. A currency crisis is considered a sudden loss in confidence and consequent depreciation of the national currency in relation to other currencies, hence the importance of studies on the speculative attacks, since in these cases is affected the real sphere of economy.

Kaminsky, Lizondo and Reinhart (1997) propose a specific methodology to build a foreign exchange crisis alert system, which consists of fifteen macroeconomic variables observed and check what their behavior in a time of crisis. In their study, when an indicator exceeded a limit meant that a country could occur a crisis within the next 24 months. The indicators in this study were: exports, the deviation of actual exchange rate in relation to its tendency, the ratio of M2 and reserves and the stock price.

Dornbusch et al. (1995) argue that the real exchange rate is a relative price, that is, when this increases economic growth and puts at risk the financial stability, which consequently leads to its reduction. The real exchange rate is considered the "strength" of policy variables. Consider also that a capital market too restrained increases the probability of the existence of a maladministration of the exchange rate and increases the final cost of a collapse.

The same authors highlight the indolence of the level and rate of change of prices as an aspect of real exchange rate behavior. Because at the beginning of any stabilization, the nominal exchange rate must play a key role, especially if the economy is in a situation of extreme inflation. They argue, that leads to the collapse of the currency are the currency devaluation, high external deficits, financial instability and, consequently, economic recession. To combat inflation, Governments tend to appreciate the domestic currency, this situation could harm economic growth, which tends to lead to a high external deficit. Over time, this type of situation becomes untenable, but not an immediate crisis. Dornbusch et al. (1995) when the behavior of the markets is in favour of a country, the real price of their currency tends to rise. In this situation, the economic

agents tend to consume the future income, because they see their productivity to grow. Argue that the currency devaluation is not the answer to the overvaluation, since the real exchange rate cannot be used simply as a political instrument.

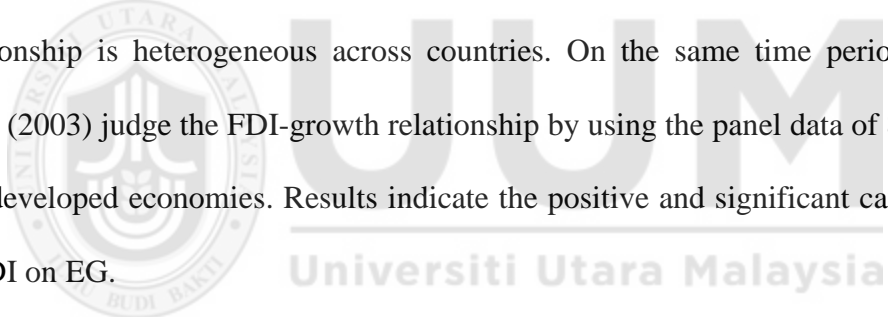
Calvo and Mendoza (2000) suggest that the models based on changes of endogenous policies or about the existence of some vulnerable banking systems can properly explain the Mexican case. Although these wordings represent an improvement over the standard approach, they are still far short of explaining the role of massive capital flows in the run-up to this crisis.

2.3.2 Foreign Direct Investment and Economic Growth

There is an extensive literature is available on the relationship of foreign direct investment (FDI) and economic growth (EG) in developing as well as developed economies. The available empirical literature is contradictory and mixed with the favorable and against response of foreign direct investment on economic growth and development. Some of the researchers conclude the positive influence of FDI on economic growth and development (Agrawal & Khan, 2011; Vudayagiri N Balasubramanyam, Salisu, & Sapsford, 1999; Campos & Kinoshita, 2002; Li & Liu, 2005; Nair-Reichert & Weinhold, 2001; Ram & Zhang, 2002; Umoh, Jacob, & Chuku, 2012; M. Wang, 2009). On the contrary, some researchers find the negative or no relationship between FDI and economic growth and development (Alfaro, Chanda, et al., 2004; Borensztein et al., 1998; Carkovic & Levine, 2002; Falki, 2009;

Georgantopoulos & Tsamis, 2011; Kohpaiboon, 2003; Mencinger, 2003; Yousaf et al., 2011).

Many cross section and panel studies have been done in the past to analyze the influence of FDI on EG in different groups and regions. Vudayagiri N Balasubramanyam et al. (1999) investigate the relationship between FDI and EG by using the panel data of 46 countries from the period of 1970-1985. They conclude the positive and significant influence of FDI on EG. Nair-Reichert and Weinhold (2001) analyze the impact of FDI on EG by using the panel data of 24 developing economies from the period of 1971-1995. The results conclude that FDI has a positive and significant impact on EG but the relationship is heterogeneous across countries. On the same time period 1971-1995, Choe (2003) judge the FDI-growth relationship by using the panel data of 80 developing and developed economies. Results indicate the positive and significant causal influence of FDI on EG.



Campos and Kinoshita (2002) use the data of 25 Central and Eastern European (CEE) and former Soviet Union transition countries from the period of 1990-1998 and conclude the positive association between FDI and EG. In another study of 16 CEE countries, Lee and Tcha (2004) reports the positive impact of FDI on economic growth in the period of 1991-2000. With using a larger dataset of 85 countries from the period of 1990-1997, Ram and Zhang (2002) also conclude in the favor of the hypotheses of FDI-growth nexus. In the case of Latin American countries, Bengoa and Sanchez-

Robles (2003) analyze the FDI-growth hypothesis in 13 Latin American countries from the period of 1970-1999 and conclude the positive and significant impact of FDI on EG.

Khawar (2005) also commented in the positive and significant influence of FDI on EG after analyzing the panel data of 59 countries from the period of 1970-1992. Another study of Li and Liu (2005) conclude the positive relationship by using the data of 84 developing and developed countries from the period of 1970-1999. In less developing economies Sylwester (2005) find the positive relationship between FDI and EG in 29 less developed economies from 1970-1989. Beugelsdijk, Smeets, and Zwinkels (2008) also report the positive relationship in the panel study of 44 countries from the period of 1983-2003. Particularly in the case of Asian countries, M. Wang (2009) conduct the study on 12 Asian economies and conclude in the favor of FDI lead growth hypothesis. The recent study of Rabiei and Masoudi (2012) also conclude the positive relationship between FDI and EG by using the data of 8 emerging economies from the period of 1980-2009. In GCC countries, Faras and Ghali (2009) use the data from the period of 1970-2006 and conclude the significant positive contribution of FDI in the growth activities of economy.

In a recent study of global panel of 63 countries, Omri and Kahouli (2014) investigate the FDI-growth nexus in three different income level countries i.e. high, middle and low income countries during the period of 1990-2011. They conclude the positive impact of FDI on growth activities in all income level countries. They also conclude the bidirectional causal relationship between FDI and EG. Baltabaev (2014) analyze the impact of FDI on the growth of total factor productivity of host country. This study

confirms that the FDI to be an important factor of technological transfer. This study also concludes the positive impact of FDI on the growth of total factor productivity. In a study of five small open developing economies i.e. Cote' d' Ivoire, Ghama, Gambia, Nigeria and Sierra Leone, Adeniyi, Omisakin, Egwaikhide, and Oyinlola (2012) concludes that financial development is a necessary part to enhance the positive influence of FDI on EG.

Liu and Agbola (2014) analyze the influence of FDI inflows on the regional economic growth in the Chinese electronic industry by using a provincial level panel data from the period of 1989-2009. They conclude that the FDI inflows have been growth enhancing in the coastal region, while the influence of FDI on growth activities is mixed in the central western regions. Taiwo and Olayemi (2015) analyze the panel data of 30 Sub-Saharan African countries during the period of 1995-2011. They analyze the causal relationship by using the non-homogenous and homogenous Granger causality estimation procedures. Results indicate the bidirectional causal relationship between FDI and EG. Furthermore, results also reports that the causality is homogenous across all members of the panel.

Several time series or single country studies are also conducted to analyze the relationship between FDI and EG in any specific country. A. Chowdhury and Mavrotas (2006) use the time series data of Malaysia and Thailand from the period of 1969-2000 to analyze the impact of FDI on EG. Results of causality analysis suggest the bidirectional causal relationship between FDI and growth in both Malaysia and Thailand. Another study of Baharumshah and Almasaied (2009) also conclude the

positive impact of FDI on EG in Malaysia by using the data from the period of 1974-2004. In the case of Mexico, Griffiths and Sapsford (2004) analyze the data from the period of 1970-1999 and find the positive and significant impact of two period lag term of FDI on economic growth.

In another study of Mexico, Oladipo (2007) also suggest the positive influence of FDI on the growth activities during the period of 1970-2004. In manufacturing sector of India, C. Chakraborty and Nunnenkamp (2006) conclude the bidirectional causal relationship between FDI and EG by using the data from the period of 1987-2000. Sahoo and Mathiyazhagan (2003) also confirm the positive impact of FDI on growth in India. In the case of China, Berthélemy and Demurger (2000) from the period of 1985-1996, Zhang (2001) from the period of 1984-1998 and G. Xu and Wang (2007) from the period of 1980-1999; report the positive association of FDI with EG in China. Al-Iriani (2007) analyze the causal relationship between FDI and EG in Oman, Kuwait, Bahrain, United Arab Emirates and Saudi Arabia from the period of 1970-2004. Results indicate the bidirectional causal relationship between FDI and EG.

In Nigeria, Umoh et al. (2012) analyze the causal relationship between FDI and EG by using the time series data from the period of 1970-2008. They conclude the bidirectional causal relationship in Nigeria. Akinlo (2004) also analyze the data of Nigeria from the period of 1970-2001 and conclude the positive and significant relationship between FDI and growth only after taking a significant lag. In Pakistan, Ghazali (2010) reports the positive relationship in the period of 1981-2008. In another study of Pakistan, Shahbaz

and Rahman (2012) use autoregressive distributed lag cointegration approach and Iqbal, Azim, Akram, and Farooq (2013) use vector autoregressive cointegration approach to confirm the valid positive long run relationship in Pakistan. Andraz and Rodrigues (2010) analyze the time series data of Portugal from 1977-2004 and reports the positive impact of FDI inflows on growth activities. In Taiwan, Bende-Nabende and Ford (1998) from the period of 1959-1995 and S.-C. Chang (2005) from the period of 1981-2003; both studies confirm the positive influence of FDI inflows on EG in Taiwan.

In the case of developed market of United States, Asheghian (2004) from the period of 1960-2000 and Ghosh and Van den Berg (2006) from the period of 1970-2001; also confirm the positive and significant impact of FDI inflows on growth activities of United States. The positive evidence is also found in the case of Vietnam by Varamini and Vu (2007) from the period of 1989-2005 and Vu (2008) from the period of 1990-2002. Agrawal and Khan (2011) also confirm the positive relationship between FDI inflows and EG in Asian countries i.e. Indonesia, China, Japan, India and South Korea. In a recent evidence of Turkey, Cambazoglu and Simay Karaalp (2014) also confirm the positive relationship between EG and FDI after analyzing the data from 1980-2010. In Thailand, Yusoff and Nuh (2015) also confirm the existence of FDI lead growth hypothesis and FDI has a significant causal influence over EG in Thailand. In Iran, Khoshnevis Yazdi, Homa Salehi, and Soheilzad (2015) also confirm the existence of FDI lead growth hypothesis during the period of 1985-2013.

The contrasting evidence is also available in the literature in which researchers conclude the negative (Borensztein et al., 1998; Kohpaiboon, 2003; Mencinger, 2003; Yousaf et al., 2011) or no significant relationship (Alfaro, Chanda, et al., 2004; Carkovic & Levine, 2002; Falki, 2009; Georgantopoulos & Tsamis, 2011) between FDI and EG. Borensztein et al. (1998) investigate the impact of FDI on EG in 69 developing economies from the period of 1970-1989 and conclude the negative association between FDI and growth. Mencinger (2003) analyze the 8 European countries i.e. Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Slovakia and Slovenia from the period of 1994-2001. Results indicate the negative association between FDI and EG. In Arabian countries, Omran and Bolbol (2003) analyze the FDI-growth nexus in 17 Arab countries from the period of 1990-2000 and report the negative relationship between FDI and growth.

Hermes and Lensink (2003) use the larger dataset of 67 less developed countries from the period of 1970-1995 and conclude the mixed results of negative and insignificant relationship about the FDI-growth hypothesis. Sapienza (2010) also reports the mixed results of positive and negative association in different situation by analyzing the data of 25 transition economies of the Central, Eastern and Southern European Region from 1990-2005. In Taiwan, Kohpaiboon (2003) also reports the negative association between FDI inflows and growth after analyzing the time series data from the period of 1970-1999. Ford et al. (2008) analyze the data of United States from the period of 1978-1997 and conclude the negative association between FDI and EG.

In the case of Pakistan, Yousaf et al. (2011) conclude the negative relationship between inflows of FDI and EG in the period of 1980-2009. In the case of Indonesia, Khaliq and Noy (2007) analyze the sectorial relationship between FDI and EG by using the data from the period of 1998-2006. Results conclude the negative relationship between FDI and growth activities in mining and quarrying sector. Liu and Agbola (2014) analyze the influence of FDI inflows on the regional economic growth in the Chinese electronic industry by using a provincial level panel data from the period of 1989-2009. They conclude that the FDI inflows have been growth enhancing in the coastal region, while the influence of FDI on growth activities is mixed in the central western regions.

De Mello (1999) analyzes the 32 developed and developing economies from the period of 1970-1990 and found weak evidence of FDI effects on EG. Carkovic and Levine (2002) in 72 countries from the period of 1960-1965, Alfaro, Chanda, et al. (2004) in 71 countries from the period of 1975-1995 and Jyun-Yi and Chih-Chiang (2008) in 62 developing and developed economies from the period of 1975-2000; analyze the relationship between FDI and EG. Results of all three studies conclude that no significant relationship exist in between FDI and EG at aggregate level. Kottaridi (2005) in 11 European countries from the period of 1980-2001 and Lensink and Morrissey (2006) in 87 developed and developing countries from the period of 1975-1997; analyze the FDI-growth nexus and conclude that there is no significant influence of FDI on EG in both studies.

Three more studies on developing economies conclude that that there is no evidence of significant causal influence of FDI on growth; Basu, Chakraborty, and Reagle (2003) on

23 developing countries from 1978-1996, Hansen and Rand (2006) on 31 developing countries from 1970-2000 and Duttaray†, Dutt†, and Mukhopadhyay† (2008) on 66 countries from 1970-1996. Irandoust (2001) analyze the time series data of Finland and Denmark from the period of 1970-1997 to judge the causal relationship between FDI and EG. Results indicate the no causal relationship exist between FDI and EG in Finland and Denmark. In the case of Chile, A. Chowdhury and Mavrotas (2006) also conclude the no relationship between FDI and EG after analyzing the time series data from the period of 1969-2000.

In India, C. Chakraborty and Nunnenkamp (2006) use the data from the period of 1987-2000 and conclude the no causal relationship between FDI and EG in primary sector. Sarkar (2007) analyze the panel data of 51 less developed economies from the period of 1970-2002 and conclude that in the majority of cases there is no significant relationship between inflows of FDI and EG. In Turkey, Gunaydin and Tatoglu (2005) also confirm the no significant influence of FDI on EG after analyzing the data from the period of 1968-2002. Kasibhatla, Stewart, and Khojasteh (2008) also reports that there is no evidence of significant causal influence of FDI on growth in China, India and Mexico after analyzing the data from the period of 1970-2005.

In Nigeria, Omoniyi and Omobitan (2011) also confirm that no significant relationship between FDI and EG after analyzing the time series data from the period of 1976-2006. Falki (2009) also reports the insignificant relationship in Pakistan in the period of 1980-2006. In South Korea, Mah (2010) also reports that there is no evidence of significant

causal influence of FDI on growth after analyzing the time series data from the period of 1970-2006. In Greece, Georgantopoulos and Tsamis (2011) also reports that there is no evidence of significant causal influence of FDI on growth after analyzing the time series data from the period of 1970-2009.

In the case of 49 African countries during the period of 1980-2009 Gui-Diby and Renard (2015) concludes that FDI did not have a significant impact on the industrialization of these countries. D. Chakraborty and Mukherjee (2012) also reports the no causal influence of FDI on EG in India after analyzing the quarterly data from the first quarter of 1996 to second quarter of 2009. In the case of Tunisia, Belloumi (2014) use the ARDL bound testing cointegration approach and reports the no causal influence of FDI on EG during the period of 1970-2008. In Nigeria, Umaru, Gambo, and Pate (2015) also confirm the no causal influence of FDI on growth activities during the period of 1981-2013.

2.3.3 Foreign Debt and Economic Growth

There is an extensive literature is available on the relationship of foreign debt (FD) and economic growth (EG) in developing economies. The available empirical literature is contradictory and mixed with the favorable and against response of foreign debt on economic growth and development. Some of the researchers conclude the positive influence of foreign debt on economic growth and development. On the contrary, some researchers find the negative or no relationship between external debt (ED) and economic growth and development. D. Cohen (1991); Çiçek, Gözegir, and Çevik

(2010); Bakar and Hassan (2011); Umutlu, Alizadeh, and Erkılıç (2011) argue that the low borrowing level has a positive and significant influence on economic growth. Sachs (1986); Tornell and Velasco (1992); Pattillo et al. (2002); Wijeweera, Dollery, and Pathberiya (2005); Uysal, Özer, and Mucuk (2009); Kumar Manmohan and Woo (2010) and Presbitero (2012) argue that the foreign debt, at high debt level, has a significant negative impact on the economic growth.

Apart from the abovementioned positive and negative nature of studies, some researchers also discuss that the relationship between foreign debt and economic growth is linear or non-linear. Schclarek (2004); Schclarek and Ramon-Ballester (2005) and Blavy (2006) claims that the relationship between FD and economic development is linear, whereas Smyth and Hsing (1995); D. Cohen (1997); Pattillo et al. (2002); Adam and Bevan (2005) and Cordella, Ricci, and Ruiz-Arranz (2005) claim that they follow the non-linear relationship.

The theoretical literature about the correlation between growth and external borrowing extensively focuses on the adverse impact of the debt burden. P. Krugman (1988) defines debt burden as the expected payback to be lower than the borrowed value. D. Cohen (1993), in his article, considers the relationship between the nominal values of investment and borrowing as Laffer curve. This curve asserts that the more increased the debt level after a threshold level is, the lower the expected payback. In the empirical study, debt burden hypothesis founded our different results? There are only a few studies which assess the direct impact of debt stock on the investment, in terms of

econometrics. In many works, variables are employed by considering that the debt stock has both direct (by decreasing the incentives for the structural reforms) and indirect impacts (through the impacts of investment) in the form of equations reduced for growth. As Warner (1992) concludes that debt crisis decreases the investment in the middle income countries, Greene and Villanueva (1991), Serven and Solimano (1993), Deshpande (1997), Elbadawi, Ndulu, and Ndung'u (1997), Fosu (1999) and A. R. Chowdhury (2001) support the debt burden hypothesis.

Jayaraman and Lau (2009) analyze the impact of foreign debt on economic growth in six Pacific Island countries from the period of 1988-2004. They report the positive association between foreign debt and economic growth. They find that a 1 percent increase in the external debt stock leads to a 0.25 percent increase in national output. Jayaraman and Lau also test for causality and find that whilst there is no Granger causality relationship between real gross domestic product and external debt in the long-run, there is a significant causal relationship running from external debt to gross domestic product in the short-run. In the case of Pakistan, Hameed et al. (2008) investigate the influence of foreign debt on economic growth by using the time series data from the period of 1970-2003. The results of long-run relationship shows that debt service affects gross domestic product negatively, most likely through its adverse impacts on capital and labour productivity. Results of Granger causality indicates that short-run and long-run negative causality runs from debt service to gross domestic product.

In the case of Nigeria, Gelix Ayadi, Adegbite, Ayadi, and Felix Ayadi (2008) analyze the influence of Nigerian's huge FD on EG by using the time series data from the period of 1975-2005. Their results find that ED contributes positively to growth up to a certain point, after which its contribution becomes negative. They also investigate the "crowding out" effect of debt servicing by regressing debt service requirements against private investment and find that Nigeria's large debt burden did indeed "crowd out" private investment. Fosu (1999) investigate the foreign debt-growth nexus in 35 Sub-Saharan countries from the period of 1980-1990. Results indicate that the outstanding FD has a negative influence over EG. Furthermore, results also finds that growth across these sub-Saharan African nations would have been 50% higher during the period of study in the absence of the debt burden.

In the case of transition countries, Uzun, Karakoy, Kabadayi, and Selcuk (2012) concludes the positive association between FD and EG in the long run after analyzing the data of 19 transition economies from the period of 1991-2009. In Nigeria, Emmanuel (2012) analyze the data from 1975-2005 and concludes that the impact of ED is negative and significant in long run while, the results is having positive and significant impact on EG in short run. These findings conclude that the ED is just good for the shorter period but it has an adverse effects in the long run. In another study of Nigeria, Chinaemerem and Anayochukwu (2013) analyze the data from 1969-2011 and concludes that London debt financing possess positive impact on economic growth, while Paris debt, Multila and Promissory note have negative impact on economic growth in Nigeria.

In Malaysia, Daud et al. (2013) analyze the impact of FD on EG over the quarterly period of 1991Q1-2009Q4. The findings suggest that the accumulation of external debt is associated with an increase in Malaysia's economic growth and up to an optimal level, and an additional increase of external indebtedness beyond the level has inversely contributed to the Malaysian economy. In the case of Tanzania, Kasidi and Said (2013) analyze the impact of external debt and debt servicing on economic growth by using the time series data from the period of 1990-2010. The empirical findings revealed that the ED has a positive and significant impact on EG, while debt servicing has negative and significant impact on EG in Tanzania.

In Tunisia, Wahiba (2014) concludes that impact of FD burden on EG is positive and significant, but beyond a certain stock of external debt, the impact becomes negative. Therefore, the borrowing should remain a necessity in cases of extreme emergency, not a solution to all economic problems experienced by the country. Shafi, Hua, Idrees, and Nazeer (2015) concludes the positive but insignificant influence of ED in Pakistan after analyzing the data from the period of 1990-2008. In a recent panel study on emerging economies, Fincke and Greiner (2015) conclude the positive association between ED and EG after analyzing the data from the period of 1980-2012 of eight emerging economies; i.e. Brazil, Indonesia, India, Mexico, Malaysia, South Africa, Turkey and Thailand. In the recent study of Greek market, Spilioti and Vamvoukas (2015) also conclude the positive impact of ED on EG by using the Greek data for about 40 years starting in 1970.

In Nigeria, Ezeabasili, Isu, and Mojekwu (2011) and Muritala (2012) concludes the negative impact of FD on EG after analyzing the time series data from the period of 1975-2006 and 1980-2010; respectively. In Turkey, Karagol (2012) also confirm the negative impact of FD servicing on gross national product (GNP). They also conclude the unidirectional relationship which runs from external debt servicing to gross national product. In Pakistan, Atique and Malik (2012) also judge the burden of domestic and external debt on EG by using the time series data from 1980-2010. Results revealed the negative and significant relationship between FD and EG in Pakistan. They also conclude that the ED slows down the process of EG more as compared to domestic debt.

In Cameron, Forgha, Mbella, and Ngangnchi (2015) analyze the influence of ED on EG by using the time series data from the period of 1980-2013. Results of two stage least square technique suggest that the FD retards EG in Cameron. In the case of developing economies, Zouhaier and Fatma (2014) analyze the data of 19 countries from 1990-2011 to judge the influence of FD burden on EG. They also conclude the negative association between FD stocks and EG. In Bangladesh, Yeasmin and Chowdhury apply the autoregressive distributed lag cointegration approach to judge the relationship between FD and EG on the annual data series from the period of 1972-2010. They confirm the adverse effect of FD on growth activities and concludes that the foreign debt slows down the process of economic development.

In East Africa Community (EAC), Babu, Kiprop, Kalio, and Gisore (2014) concludes the negative and significant impact of ED on EG after analyzing the data of 5 countries

from the period of 1970-2010. Siddique, Selvanathan, and Selvanathan (2015) analyze the impact of ED burden on EG by using the data of highly indebted poor countries (HIPC) from the period of 1970-2007. The empirical findings suggest that the reduction in the debt stock have significantly increased the EG in the indebted countries both in long run and run short. In India, Shafi et al. (2015) also conclude the negative association between FD and EG after analyzing the time series data from 1990-2008. In the recent cross country evidence of 48 Sub-Saharan countries, M. E. Hussain, Haque, and Igwike (2015) concludes the negative relationship between ED and EG. In another recent study on Philippines Akram (2015) also confirm the negative association between ED and EG during the period of 1975-2010.

2.3.4 Workers' Remittances and Economic Growth

There is an extensive literature is available on the motives and relationship of workers' remittances (REM) and economic growth (EG) in developing as well as developed economies. The past literature distinguish the three motives of workers remittances: pure altruism, pure self-interest and informal arrangements with family members in the home country (Adams, 2009; Robert EB Lucas & Stark, 1985; Rapoport & Docquier, 2006). The altruistic motive explains that the transfer of workers' remittances to home country tends to increase with the increase in the migrant income, and decrease as the social belongings, relationships and attachments to family in the home country weakens over time. Under the altruistic motive the migrants usually transfer money in the home country to help smooth consumption of family members (Frankel, 2011; International Monetary Fund, 2005; Singh, Haacker, & Lee, 2009).

On the other side, the migrants with the motive of pure self-interest transfer remittances to home country to invest during good times; thus remittances behave like foreign investment which raises the domestic capital stock and economic growth (Lueth & Ruiz-Arranz, 2008). S. Lim (2013) argue that there is an implicit agreement between migrants and family members regarding the flow of remittances and the proportion to use these amount in consumption, saving and investment. Once the contract is enforced, migrants appear to send a constant fraction of their income earned abroad.¹⁵ Alleyne, Kirton, and Figueroa (2008) analyze the motives of workers' remittances in 8 English speaking Caribbean Community and Common Market (CARICOM) countries and concludes that migrants' remittances to this region are motivated by both altruism and self-interest.

The available empirical literature is contradictory and mixed with the favorable and against response of REM on EG. Some of the researchers conclude the positive influence of REM on EG (N Catrinescu & Leon, 2010; Faini, 2007; Ramirez & Sharma, 2008; World Bank, 2006b; Zieseimer, 2006). On the contrary, some researchers find the negative or no relationship between REM and EG (Barajas et al., 2009; Chami et al., 2003; Gupta, 2005; International Monetary Fund, 2005). Ruiz-Arranz and Giuliano (2005) analyzed the relationship between REM and EG on a large cross country data of developing and developed economies. They conclude that REM have positive and significant influence on EG in countries with weak financial sectors and negative influence on countries with developed financial sectors.

¹⁵ For details also see, Lucas & Stark, 1985.

In general, the impact of REM on EG of recipient country is positive by providing the enhancement in the total national savings and private investment in the country. Aitymbetov (2006) claim that in Kyrgyzstan the approximately 10% of migrant remittances are used in the different investment in micro-enterprises, which leads to have a positive influence over economic growth. It is also arguing that 5% to 10% flow of migrants' remittances are invested in the micro-enterprises, which have a positive and significant influence on long term growth of these labor-intensive economies.

G. Mundaca (2005) analyze the relationship between REM and EG in Central America. Results indicate the significant positive relationship between the flows of REM and EG, the impact is stronger when the proxies of financial sector is included in the model. Giuliano and Ruiz-Arranz (2009) analyze the cross country data and conclude that the positive impact of REM on EG is majorly seen in the less financially developed countries. Zieseimer (2006) conclude that the higher positive impact of REM on EG seen in countries with low per capita income.

Many empirical studies also conclude that the flow of REM improve the living standards of the recipients' household and find the positive and significant impact on the health improvements, poverty alleviation and education (Adams Richard & Page, 2003; A. C. Edwards & Ureta, 2003; Hildebrandt & McKenzie, 2005; World Bank, 2006b; Yang, 2008). Remittances are more linked to the phenomena of brain drain. For Instance, to the extent that those who receive additional education are more likely to emigrate, remittances may foster brain drain. On the other hand, skilled migrants usually earn more and may remit more, mitigating the negative impact of brain drain on the

home country (Beine, Docquier, & Rapoport, 2008; Ratha, 2003). However, skilled workers may show a lower propensity to remit because, for example, they are from wealthier families and spend a longer period of time abroad (Faini, 2007; Niimi, Ozden, & Schiff, 2010).

Some of the other researchers also suggest the positive impact of REM on aggregate income, investment and employment and they all leads to enhance the economic growth in the country (Adelman & Taylor, 1990; Bjuggren, Dzansi, & Shukur, 2010; Glytsos, 1993, 2002; León-Ledesma & Piracha, 2001). Le (2009) uses the data of developing economies to analyze the determinants of economic growth. The empirical findings suggest the positive impact of REM on EG. Bettin, Lucchetti, and Zazzaro (2009) analyze the reverse causality between REM and EG by using the data of immigrants coming to Australia from 125 countries. The findings suggest the importance of accounting for reverse causality and simultaneity between REM and consumption. H. A. Ahmed and Uddin (2009) also analyze the causal relationship in Bangladesh by using the data from the period of 1976-2005. The results suggest the unidirectional causal relationship running from REM to EG.

Siddique et al. (2012) analyze the causal relationship between REM and EG in three South Asian countries. Their findings suggest the bidirectional causal relationship between REM and EG in Sri Lanka, whereas unidirectional causal relationship is found in Bangladesh running from REM to EG. However, no causal relationship is found in India. The report of World Bank (2006a) shows that in Latin American and Caribbean (LAC) countries the impact of REM on EG is positive and significant. B. G. Mundaca

(2009) also analyze the 25 LAC countries and found the positive and significant impact of REM on EG. The findings also conclude that the financial development is essential to enhance the impact of REM on EG. Bettin et al. (2009) show that an efficient banking system complements the positive effect of REM on GDP growth. In a recent study on 21 LAC counties, Nsiah and Fayissa (2013) find the positive and significant association between REM and EG and conclude that the 10% increase in REM is associated with 0.3% growth in income.

Ramirez and Sharma (2008) also analyze the panel data of 23 LAC countries from the period of 1990-2005 and conclude the positive association between REM and EG. They also conclude that the impact is greater in a country with less access to private credits. Ramirez (2013) also provides the same results by extending the data set up to 2007. Natalia Catrinescu, Leon-Ledesma, Piracha, and Quillin (2009) conclude that good institution can enhance efficient utilization of remittances that lead to increase in output. In contrast, CRUZ ZUNIGA (2011) discussed positive effect of REM on EG does not depend on healthy institutions.

Cooray (2012) examine the effect of REM on EG in South Asia by employing panel data from 1970 to 2008 and conclude positive association between REM and EG. Nsiah and Fayissa (2013) examine the relationship between REM and EG in different set of countries of different region namely Africa, Asia and Latin American-Caribbean. Findings revealed that REM and EG has significant and positive association on aggregate level as well as region wise model. In another study of South Asia, Jawaid and Raza (2014) investigate the relationship between worker remittance, its volatility

and economic growth in South Asian countries namely, India, Bangladesh, Pakistan, Sri-Lanka and Nepal. Evidence report in the study suggest that REM has significant positive impact on EG in Bangladesh, India, Nepal and Sri Lanka while, negative and significant impact were found in Pakistan. In addition, volatility of REM has negative and significant linkage in all selected countries except Nepal.

In recent times, the case of 10 Central and Eastern European (CEE) countries, Goschin (2014) analyze the influence of workers' remittances as a key production factor during the period of 1995-2011. Results suggest the positive and significant influence over both absolute and relative economic growth in the panel of CEE countries. Another study of Rao and Hassan (2012) investigation based on high remittances recipient economies with a sample data of 40 countries. Results conclude that worker remittance growth effect followed four main channels. However, these four growth channels were found to be very small but their effect is not negligible. In the presence of several different channels of remittance indirect growth effect, this study has considered four main channels. These channels were found to be significant and both negative/positive growth effect. The channels include exchange rate, volatility output, financial sector development and investment rate. Among these, exchange rate has the smallest effect while the volatility showed greatest impact on growth. Overall, these four channels have positive effect on growth in the study sample.

Ha, Yi, and Zhang (2015) analyze the provincial level data of China from 1980-2005 to judge the impact of permanent and temporary emigration on economic growth and human capital formation. The empirical results indicate that the both permanent and

temporary emigration has a detrimental effect on economic growth of the source regions. In Guyana, Kumar (2013) use the annual data from 1982-2010 to reports the positive association between REM and EG in long run as well as short run. Nsiah and Fayissa (2013) analyze the period of 1985-2007 considered a total of 64 countries in a sample. The sample includes, 21 countries from Latin America and Caribbean region, 14 from Asian region and 29 from African economies. The empirical relationship reported in the study suggest that remittances have a significant positive influence over economic growth for all regions. M. Al Mamun, Sohag, Uddin, and Shahbaz (2015) analyze the relationship between remittances and the domestic labor productivity in 61 top remittances recipient countries of the world. They conclude that though remittance has a positive impact on domestic labor productivity for countries with higher size of remittance inflow and abundant labor force; however, there is new evidence that such impact diminishes after certain level. Moreover, such result does not hold for countries with higher remittance-share of GDP. In a recent study of Nigeria, Oshota and Badejo (2015) considered a balanced time series data for the year of 1981-2011. Findings conclude that the EG and REM have significant and positive linkage in the long run while they signify a negative and significant relationship in the short run.

There are contrasting evidence are also available in the literature which suggest the negative association between REM and EG of the country. One study of Chami et al. (2003) analyze the relationship between EG and REM on a balanced panel data of selected 113 countries from the period of 1970-98 and conclude the negative impact of REM on EG. They conclude that remittances behaves like compensatory transfers while

it doesn't play its role in economic growth process as a financial aid factor. They argue that the worker remittances don't used for savings and investment but for consumption drive. On the same vein, Chami et al. (2003) suggest that the long distance between recipient and migrant cause asymmetric information in the context of worker remittances. In this sense, the consumption or end use of remittances is hardly to monitor which increase moral hazards.

Additionally, past investigation of Chami, Cosimano, and Gapen (2006) further analyzed the model of Chami et al. (2003) to consider a dynamic general equilibrium context. This model show that output volatility increases while labour supply decreases, which create the negative impact on economic growth and activities. Giuliano and Ruiz-Arranz (2009) analyze the cross country data and conclude that REM and EG negative relation is majorly seen in the financially developed countries. More precisely, in these countries, they argue that people do not wait for remittances in the context of investment purposes while credit is easily available for them. Some of the empirical investigation report that developing economies technological capacity rely on the trade of competitive goods. In this sense, recipient economies may have direct and negative linkage with remittances due to the increment in the exchange rate of a country (Amuedo-Dorantes & Pozo, 2004; Lartey, Mandelman, & Acosta, 2008; Lopez, Bussolo, & Molina, 2007).

Furthermore, Amuedo-Dorantes and Pozo (2004) study conclude that workers' remittances could reduce the international competitiveness and impose economic costs on the exports sectors of receiving countries. Parinduri and Thangavelu (2011) argue

that the human capital accumulation of children can be negatively affected by the fact that one parent leaves home to work abroad and sends money. Kireyev (2006) also highlighted the same findings where REM have negative impact on EG. Waheed and Aleem (2008) investigation highlighted that REM has significant positive effect linkage with EG in short run. On the other side, there exist a negative and significant effect of REM on EG in long run in Pakistan.

More recently, Jawaid and Raza (2014) find out a relationship between EG and REM volatility in five south Asian countries namely Pakistan, Sri Lanka, India, Bangladesh and Nepal. Findings revealed that EG and REM has positive association in India, Sri Lanka, Bangladesh and Nepal while, negative and significant effect were reported in case of Pakistan. In addition, Nepal is the only country where volatility of REM showed positive effect on EG while rest of the selected sample countries have significant negative impact. In a recent evidence from Kenya, Kumar (2014) analyze the data from 1978-2010 and conclude the negative impact of REM on EG activities in the long run, while positive relationship is found in short run. In a recent study of Nigeria, Oshota and Badejo (2015) collected a time series data for the year of 1981-2011 and conclude that a long run relation positive and significant relationship found between REM and EG. However, a significant negative relationship is found in the short run. In another recent study on Tunisia, Jouini (2015) also reports the significantly negative association among the EG and REM during the period of 1970-2010 in both short run and long run.

The cross-section studies of International Monetary Fund (2005) and Faini (2006) find the positive but insignificant linkage between REM and EG. Vargas-Silva, Jha, and Sugiyarto (2009) analyze the Asian countries and find the positive but insignificant relationship between EG and REM. On the same note, Giuliano and Ruiz-Arranz (2009) analyze the period of 1975-2002 in 73 countries to judge the effect of REM on five year growth of GDP. They conclude the insignificant relationship between EG and REM. Jongwanich (2007) analyze the panel data of 17 Asia and Pacific region countries from the period of 1993-2003. The findings of study conclude that the insignificant relationship is found in between REM and three-year growth rate of GDP. De Soto (2000); Eckstein (2004) and Spatafora and Aggarwal (2005) also confirm that REM do not have any influence over EG. In a recent study of Caribbean Community and Common Market (CARICOM), S. Lim and Simmons (2015) analyze the data of 13 CARICOM countries over the period of 1975-2010 and conclude that there is no evidence of long run relationship between of REM with EG and investment. They also conclude that the inflows of workers' remittances in CARICOM regions are mainly used for consumption purpose.

2.3.5 Exports and Economic Growth

Despite the theoretical appeal and continuous development in the market structures of developing and developed market, which enhanced the need of diversifying products from across the world. The available empirical literature is contradictory and mixed with the favorable and against response of export expansion hypothesis (M. Hussain, 2006; Anthony P Thirlwall, 2011). These empirical literature with contradictory results also be

attributed to the fact the relationship between export (EXP) and economic growth (EG) is actually a country specific issue (Nissanke & Thorbecke, 2006; Rangasamy, 2009). Especially the earlier cross country studies revealed that the growth process is a highly country specific issue (Grindle, 2004). These results confirmed that the countries operating within a different region and context cannot lead to validate the export-growth hypothesis.

S. Y. Lim, Chia, and Ho (2010) and S. Y. Lim and Ho (2013) also argued that the relationship between EXP and EG is vary form one time scale to another time scale. Therefore, the relationship for the short run and long run might be different in nature for any specific country. In this section, we discuss three important extant of available literature on export-growth nexus: firstly, we discuss those studies which have advocated in the favor of export expansion hypothesis; secondly, we discuss those studies which emphasized on the benefits of export expansion, but given certain conditions, and in the last we discuss those studies which have argued against the export-growth nexus. Balassa (1978) was one of the earlier researcher who favored the export oriented strategies against import-substitution strategies. The report of World Bank (1987) confirmed the export-growth nexus in developing economies. This reports recommends that the export-growth nexus is the most effective way to ascertain the economic development. The earlier available empirical literature of cross country studies majorly support the export expansion hypothesis (Balassa, 1978; Feder, 1983; Kavoussi, 1984; Moschos, 1989; Ram, 1985; Tyler, 1981).

In a similar vein, there are many researchers confirm the argument of export expansion strategies. Jun (2007) applied cointegration techniques to analyze the export-growth nexus on a panel data of 81 countries from the period of 1960-2003. Results suggested the export-driven growth theory. In a contradictory way, Bahmani-Oskooee and Oyolola (2007) applied bound testing cointegration approach instead of traditional cointegration approaches to ascertain the relationship between EXP and EG. The findings suggested the export-growth hypothesis in the panel data of 44 developing countries. There are many other cross country studies which favor the export led growth hypothesis such as Anthony P Thirlwall and Hussain (1982) for the developing economies, M. N. Hussain (1999) and Nell (2003) for the African countries, Gouvea and Lima (2010) and Cimoli, Porcile, and Rovira (2010) for the Latin American and Asian countries.

There are many time series studies are also available in the literature which discussed the relationship between EXP and EG. Most of the recent studies to analyze the export led growth hypothesis based on a time series data (Rangasamy, 2009). Grindle (2004) argued that any policy related to successful development of export led growth strategies is based on the specific conditions of the country. In time series studies, the researchers mainly ask to judge the causal relationship between EXP and EG in a specific country. The main question is to find that either exports cause an influencing role over economic growth in a country.

Many studies found support for export-growth nexus by employing the causality testing, long run cointegration methods and error correction models for the short run. These

includes Hossain and Dias Karunaratne (2004) for Bangladesh, Abual-Foul (2004) for Jordan, K. A. Al Mamun and Nath* (2005) for Bangladesh, Dash (2009), Tabrizy and Trofimenko (2010), Nain and Ahmad (2010), Paul and Das (2012) for India, Herrerias and Orts (2010) and T. Chang, Simo-Kengne, and Gupta (2013) for China and others. Eita and Jordaan (2010) analyze the same relationship in Namibia by using the cointegration and Granger causality approaches. Results indicated the exports cause a change in the growth of Namibia in the period of 1970-2005. Awokuse (2003) were found the similar results by using the vector autoregressive and vector error correction method in Canada. Balaguer and Cantavella-Jorda (2002) also confirmed the long run relationship between export and economic growth in Spain.

Moreover, Vohra (2001) analyzed the relationship between EXP and EG by using the time series data of 5 Asian countries namely; India, Pakistan, Thailand, Philippines and Malaysia from the period of 1973-1993. Results indicated in the support of EXP lead EG hypothesis. Similarly, Felipe (2003) analyzed the export-growth nexus in Asian developing countries and found the positive relationship between EG and EXP oriented strategies. Likewise, Nasreen (2011) also studied the Asian developing countries from the period of 1975-2008. The results revealed that the bidirectional causal relationship is found between exports oriented policies and economic growth in Indonesia, India and Sri Lanka. Whereas, unidirectional causality from EXP to EG is found in Thailand and Malaysia, while, the reverse causal relationship is found in Pakistan.

A. D. Ahmed, Cheng, and Messinis (2007) examined the Sub-Saharan African countries to analyze the policy reforms of early 1990's to promote export activities. The results of

ARDL bound testing cointegration approach confirmed the existence of export-growth hypothesis in the long run. Results also indicated that the EXP has a causal effect on the EG of Sub-Saharan countries. Chigusiwa, Bindu, Mudavanhu, Muchabaiwa, and Mazambani (2011) used the same methodology in Zimbabwe from 1977-2006. Results found the valid long run and short run effects of EXP on growth activities. Likewise, analyzed the same export-growth relationship by using the Breitung cointegration test in Indonesia, Thailand and Malaysia. Results indicate the confirmation of export led growth hypothesis in all countries.

The past literature indicated that the relationship between EXP and EG mainly depends on level of economic development in the country. Maizels, Campbell-Boross, and Rayment (1968) argued that the relationship between EXP and EG is not always the same in different type of economies. This relationship is different in terms of size of the economy, the level of economic development, the level of industrial development and the proportion of the exports products and services relative to the products and services require for the entire economy. Michaely (1977) analyzed the data of 41 less developed countries and concluded that the relationship between EXP and EG is existed only once countries achieved some minimum level of economic development.

Moschos (1989) also confirmed the findings of Michaely (1977). Furthermore, Sheehy (1992) and Vohra (2001) revealed that the strong relationship between EXP and EG mainly exist in the industrialized countries. Sahni and Atri (2012) analyzed the export-growth nexus in India from the period of 1980-81 to 2008-09. Results indicated the EXP has significant and positive effect on EG only after achieving the certain level of

economic development through domestic investment. Paul and Das (2012) argued that the level of economic development, trade policy orientation and degree of trade liberalization are the key determinants for the successful relationship of exports and growth. Dreger and Herzer (2013) confirmed the flexibility in labour market and extent of the regulatory burden on business; Seabra and Galimberti (2012) confirmed human capital development as a likelihood of successful relationship of export and economic growth. The endogenous theory developed by Paul M Romer (1986) and Robert E Lucas (1988) mainly discussed the role of conditioning factors to strengthen the relationship of EXP and EG.

There are many studies are available in literature which are against the export expansion hypothesis. Prebisch (1962) was in the favor of the import substitution approach as trade protection allowed an economy to become self-sufficient. Jung and Marshall (1985) also rejected the export led growth hypothesis in 33 out of 37 developing countries. The Ecuador, Egypt, Indonesia and Costa Rica are the only countries where export led growth hypothesis is existed. Colombatto (1990) also rejected the export-growth nexus in a sample of 70 countries. Wilbur and Haque (1992) also confirmed no significance impact of exports to enhance economic growth by using the cross country data of 12 rapidly developing countries.

Another cross country study of Dodaro (1993) revealed against the export expansion hypothesis in over 90 countries from the period of 1960-1986. There are some time series studies are also rejected the export-growth nexus for a case of specific country.

Yaghmaian and Ghorashi (1995) analyzed the 30 developing countries and concluded that export-growth nexus lacked statistical significance. The same findings were also confirmed by Dodaro (1991) by using the data of less developed economies. He also claimed that the strength of export-growth nexus based on the level of economic development in the country. Z. Xu (1996) in the case of India and Ahmad and Harnhirun (1996) in the case of 5 ASEAN countries, both rejected the evidence of any relationship between EXP and EG. Similarly, M. Hussain (2006) also argued some doubts on the universal applicability of export-growth nexus for developing economies. Udah (2012) analyzed the causal relationship between EXP and EG in Nigeria. Results concluded that there is no export-growth nexus existed in Nigeria.

The above discussion clearly dictates the different opinions of researchers on the export expansion hypothesis. Some of the researchers also criticize on the methodology used by the researchers who concluded in the favor of export expansion hypothesis. They argued that the relationship between EXP and EG is in a dynamic nature and researchers should use the dynamics elements in their methodology or modelling frameworks (Bahmani-Oskooee & Oyolola, 2007).

Some of the researchers also argued that the dynamic nature of export led growth is not only a factor but also applied an endogenous relationship. They also believe that this model should be follow for investigation (Awokuse, 2005; Balaguer & Cantavella-Jorda, 2002). Herrerias and Orts (2010) analyzed the role of exports and capital accumulation in the Chinese economic development by using the cointegrated VAR

models. Results indicated that both exports and investment are relevant factors to determine the economic growth of China. However, the issues of indirect effect and reverse causality were underestimated. Siddiqui and Hye (2011) used ARDL approach to analyze the long run relationship between terms of trade, exports and economic growth. The results suggest the export led hypothesis by applying this dynamic model with terms of trade. Chigusiwa et al. (2011) also used the same approach to analyze the long run relationship between EXP and EG in Zimbabwe and found similar results as above.

Bahmani-Oskooee and Economidou (2009) analyzed the long run relationship between EXP and EG in 61 countries from the period of 1960-1999 by using the Johansen's co-integration approach and weak exogeneity tests. Results indicated that the export led growth hypothesis is country specific and exhibiting no uniform pattern. In contrast, Nasreen (2011) used the selected sample data of Asian countries for the year 1975-2008. They have applied panel unit root, cointegration and causality analysis to judge the export expansion hypothesis. Results suggested the bidirectional valid long run relationship between EXP and EG.

In Greece, Dritsaki (2013) use the vector error correction model and Granger causality estimation procedures to analyze the causal influence of EXP on EG during the period of 1960-2011. Results suggest the unidirectional causal influence were reported between EG and EXP in Greece. In the case of South Africa, Ajmi, Aye, Balcilar, and Gupta (2015) analyze a sample time series data from the period of 1911-2011. The results of linear Granger causality findings suggest no clear evidence of causal relationship

between EG and EXP. However, the results of a more powerful less biased non-linear causality test of Diks and Panchenko (2006) reports the bidirectional causal relationship of EXP and EG in South Africa. In another cross-country study of 65 countries from the period of 1965-2005, Aditya and Acharyya (2013) investigate the exports lead growth hypothesis at disaggregate levels. Results of the study report that the disaggregation were found at the exports level and at the country level. Furthermore, this study suggest that key determinants of economic growth includes composition of exports and its diversification. This study also suggests that EG and EXP relationship may be stronger in countries which contain greater share in manufacturing exports than to the overall world average.

In the case of China, Muhammad Adnan Hye (2012) analyze the export-led growth hypothesis during the period of 1978-2009. The empirical results confirm the positive and significant impact of EXP on EG. The results also confirm the bidirectional causal relationship between EG and EXP in China. Zang and Baimbridge (2012) analyze the causal relationship between EG and EXP in Japan and South Korea. Results report that the EXP have a significant causal influence over EG in Japan, while no causal influence is found in South Korea. In Italy, Pistoiresi and Rinaldi (2012) use the long time series data of 140 years from the period of 1863-2004. The findings of the study suggest that there exist a co-movement for EXP and EG in the long run while causality direction between them vary across the time. The prior time period of First World War, the growth of import led economic growth which results led export growth. On the other hand, after the second World War time, exports and imports were reported as strong bi-

directional causality which in turn an increment in intra-trade industry. The study concludes with weak growth led import and export led growth channel. Overall, it is recommended that economic growth is not only due to the export growth in the country.

In a recent study of 12 Middle East and North African (MENA) countries during the period of 1990-2011, Omri et al. (2015) concludes the bidirectional causal relationship between trade and economic growth. In a recent study, Tang et al. (2015) reinvestigate the export-led growth hypothesis for Asia's Four Little Dragons namely, South Korea, Hong Kong, Taiwan and Singapore. Results suggest that EXP and EG are cointegrated in all four countries. Furthermore, the findings show that export-led growth is not stable over their respective period of analysis in each of the four countries. They recommended that instead of exports, policy makers should consider some alternative ways for growth in contrast with the promotion of growth in the long run for "Four little Dragon economies".

Hye (2012) also reports the negative association between trade and economic growth in Pakistan during the period of 1971-2009. Acaravci and Ozturk (2012) analyze the causal influence of EXP on EG in 10 transition European Union countries by using the quarterly data from 1994-2008. Results of causality analysis confirm the significant causal relationship in between EXP and EG in only four out of ten considered countries. In Sri Lanka, Achchuthan (2013) also reports the positive impact of EXP on EG during the period of 1970-2010. In a recent study of India, Dar, Bhanja, Samantaraya, and Tiwari (2013) use the wavelet base time-frequency approach to judge the export-led growth hypothesis by using the monthly data from January 1992 to October 2011. The

empirical evidence reported in the study report that Indian economy contain strong relationship between EG and export growth. Furthermore, study also suggest that this strong relationship strengthened as the time period increases. The findings further confirm the bidirectional causal relationship at higher time scales. In recent study of Malaysia, Haseeb et al. (2014) use annual time series data from the period of 1971-2013 and conclude that there exist a positive and significant relationship between productivity factor, external effect of exports and the non-export sector. In addition, the effect of exports on economic growth were found to be significant positive.

2.4 Research Gap

In recent years we have been witnessing the increasing occurrence of currency and financial crises, both in developed or less developed countries. The countries have become more vulnerable and not able to predict currency collapses. A currency crisis is considered a sudden loss in confidence and consequent depreciation of the national currency in relation to other currencies, hence the importance of studies on the speculative attacks, since in these cases is affected the real sphere of economy. In last 20 years, the world seen a 20 major events of banking, currency or financial crisis.

The above discussion conclude that the foreign capital inflows (FCI) in the form of foreign direct investment, external debt, exports of goods and services and workers' remittances have significant influence over the economic growth, but the results were contradictory (positive/negative) and vary within the countries. Therefore, there is a need to identify the relationship between FCI and economic growth on the homogenous

panel set of different income level countries i.e. low income, lower middle income, upper middle income and high income countries. Furthermore, it is also observing that the financial crises have a significant influence over the flows of foreign capital in both developing and developed economies. These financial crises effect the flow of foreign direct investment and international trade among the countries. Furthermore, the required external debt for the development projects are also become scare for the developing economies because of the consistent flow of financial crisis. The trend analysis discussed in the background section of this study also highlighted the significant volatility in the flows of foreign capital during the period of banking, currency or financial crisis. Therefore, there is a need to identify the relationship between FCI and economic growth in the presence of currency crisis and banking crisis on the homogenous panel set of different income level countries.

This study fulfills the missing area of research in foreign capital inflows (FCI) by evaluating the relationship between foreign capital inflows and economic growth of countries with different income levels. The major contribution of this study is to analyze the influencing role of currency crisis and banking crisis on the relationship of foreign capital inflows and economic growth. Another major contribution of this research is to use the different items of foreign capital inflows of any country. In most of the past studies researchers used only one item to analyze the impact of foreign capital inflow on economic development of economies. But in literature there are more than one indicator are available to analyze the overall foreign capital inflows of any country.

This study is using four major items of foreign capital inflows, which play a major role in the economic development namely; foreign direct investment, workers' remittances, external debt and exports of goods and services. These four items are the main sources of foreign capital inflows for the countries. This study analyzes the relationship of four major items of foreign capital inflows with economic growth in high income, upper middle income, lower middle income and low income countries to better judge the relationship between foreign capital inflows and economic development. This study will be beneficial and also provides policy recommendations to policy makers of all targeted countries either the high income, middle income or low income.



CHAPTER THREE

THEORETICAL FRAMEWORK AND RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, we discuss the theoretical framework for the present study with a view to formulating the model that will be used to analyze the relationship between foreign capital inflows, banking crises, currency crises and economic growth in different income level countries.

3.2 Theoretical Framework

The framework of this study has its basis in the Neo-classical, Endogenous and Exogenous growth theory developed Solow (1956) and Swan (1956). Economic Growth generally define as an increase in the amount of goods and services produced per head of the population over a period of time. The Neo-classical theory is based on the Cobb-Douglas production function which is a particular functional form of the production function, widely used to represent the technological relationship between the amounts of two or more inputs, particularly physical capital and labor, and the amount of output that can be produced by those inputs (Cobb & Douglas, 1928). The Exogenous Growth theory define as “The belief that economic growth arises due to influences outside the economy or company of interest. Exogenous growth assumes that economic prosperity is primarily determined by external rather than internal factors”. On the other side, Endogenous growth theory holds that “economic growth is primarily the result of endogenous and not external forces. Endogenous growth theory holds that investment in

human capital, innovation, and knowledge are significant contributors to economic growth”.

In this study, we consider foreign capital inflows in the form of exports of goods and service, foreign direct investment, workers’ remittances as a production function of economic growth. Foreign capital inflows play a significant role in the economic growth of developing and developed countries. The experience of the newly industrialized economies has firmed the belief that foreign capital could fill the resource gap of the capital-deficient economies. Foreign capital comprises the movement of financial resources from one economy to another (Ali, 2014; Nkoro & KelvinUko, 2012). Financial aid and grants are considered as a volatile or event based flow of foreign capital in the economies whereas, foreign direct investment, external debt, workers’ remittances and exports of goods and services are considered as a more sustainable form of foreign capital inflows for both developed and developing economies (Raza & Jawaaid, 2014; Tehseen Jawaaid & Raza, 2012).

Foreign investment (FDI) are especially desired in developing countries that they are perceived as a factor of economic growth, a complement to domestic investment and a source of financing of the current account deficit. FDI contribute the host country in the form of technological externalities, the formation of human capital or have access to foreign markets which lead to long-term economic growth. FDI not only resulted a reduction in unemployment by creating more employment opportunities but it also

provides assistance by technology transfers, accelerates local investment, nurturing human capital and institutions in the host developing countries.

There are several channels through which technology transfer can take place: the demonstration/imitation, competition, the mobility of employees and trade links across the sector. The demonstration of new techniques of production by multinational corporations can encourage local companies to emulate them and thus improve their productivity (J.-Y. Wang & Blomström, 1992). Increased competition from foreign subsidiaries can force local competitors to improve their effectiveness (Glass & Saggi, 2002). When those companies recruit trained employees in the multinationals, they can contribute significantly to the improvement of productivity. These first three channels work instead at the horizontal level. Yet vertical externalities have proved to be much more intense than horizontal. The increased demand for intermediate goods allows economies of scale at the level of local service providers and promotes greater productivity (Javorcik, 2004). It is also possible that foreign subsidiaries transfer deliberately technology to their suppliers, to help meet the standards of quality (Blalock & Gertler, 2005). After-sales services and distribution networks can improve the efficiency of downstream businesses.

Few previous studies also found some negative impact of foreign direct investment on economic growth. Introduction of new technologies assume or requires the existence of skilled labor in the host country, which are capable and trained of using those technologies. If the supply of labor is short in host country than it leads to negative

impact on production and economic growth. Another possible reason of negative impact may include the imperfect competitive market. Entrance of foreign companies in the imperfect competitive markets may leads to reduce market share of domestic producers. Capabilities of scale economies also suffer in domestic producers because of loss of market share, which has a negative impact on productivity. It is also theoretically possible that increased competition can compensate any indirect transfer of technology, leading to an overall impact neutral, or even negative. Markusen and Venables (1999) argue that the penetration of FDI in local market increases competition, which creates a sign of alarm for the local competitors especially in the developing economies.

Migrant workers' remittances are gradually becoming an important source of income for developing economies. Remittances are more important for economic growth because of its stable nature as compared to other external inflows of capital like loans, aids and FDI. On the other hand, remittances are found to be in a positive trend when the host economy suffers a recession because of financial crisis, political conflicts or natural disasters etc. as expatriates remit more during crucial time for so that they can support their nations accordingly(Siddique et al., 2012). Studies also argues empirically the positive relationship between workers' remittances and growth of the economy (Azam & Khan, 2011; Faini, 2006; Fayissa & Nsiah, 2010; Jongwanich, 2007). More precisely, workers' remittances are found to be significant source of increase in investments and consumption in host countries. Workers' remittances have been proved to be a source of alleviating poverty in developing countries (Imai et al., 2011; Jongwanich, 2007).

Some empirical studies also found the negative impact of workers' remittances on economic growth (Chami et al., 2003; Jawaid & Raza, 2014; Karagöz, 2009; Tehseen Jawaid & Raza, 2012; Waheed & Aleem, 2008). The economic growth may have negative impact of capital inflows (remittances) in the host country which causes the decrease in labor force participation. This type of capital inflows may consider as transfer of income. Furthermore, this transfer of income may be beleaguered by stern moral hazard problem. In this regard, the recipients promotes to use alternate way of consumption and the labor market effort reduce accordingly (Jawaid & Raza, 2014). In 1974, one study of Becker's pointed out that migrant's remittances may not be considered as profit driven due to spending on consumption rather than investment in Pakistan. Another study of Kritz et al. (1981) signify that imports may increase through remittances in the country which further widen the deficit in balance of payment. On the same vein, Keely and Tran (1989) argued that remittances are the dangerous source of finance due to volatility in the migration of people which further diminish the foreign exchange reserves of the country.

In most of the developing countries, it is expected that when facing a scarcity of capital would resort to borrowing from external sources so as to supplement domestic saving (Aluko & Arowolo, 2010; Safdari & Mehrizi, 2011; Sulaiman & Azeez, 2012). Soludo (2003) asserted that countries borrow for two broad reasons; macroeconomic reason that is to finance higher level of consumption and investment or to finance transitory balance of payment deficit and avoid budget constraint so as to boost economic growth and reduce poverty. External debt is a major source of public receipts and financing capital

accumulation in any economy (Adepoju et al., 2007). It is a medium used by countries to bridge their deficits and carry out economic projects that are able to increase the standard of living of the citizenry and promote sustainable growth and development. Gohar et al. (2007) opined that accumulated debt service payments create a lot of problems for countries especially the developing nations reason being that a debt is actually serviced for more than the amount it was acquired and this slows down the growth process in such nations. Pattillo et al. (2002) asserted that at low levels debt has positive effects on growth but above particular points or thresholds accumulated debt begins to have a negative impact on growth. Furthermore, Fosu (2009) observed that high debt service payments shifts spending away from health, educational and other social sectors.

Many researchers believe that exports of a country play a vital and significant role to enhance the growth of the economy (Balaguer & Cantavella-Jorda, 2002; Dodaro, 1991; Omri et al., 2015; Tang et al., 2015; Vamvoukas, 2007). The spillover effect of the export sector in the production process of an economy also contributes in the total productivity of a country. Moreover, export help in importing high value technology, products and inputs that cause increases in the productive capacity of a country (Jung & Marshall, 1985; Vamvoukas, 2007). Furthermore, when growth in output level produces skills and technological advancement, this may also increase the efficiency level, which in turn greater exports of a country (P. Krugman, 1984; Lancaster, 1980). The realization of economies of scale results export rise with the help of rise in productivity.

This increment in exports can further reduce cost, which may also increase in the productivity growth (Helpman & Krugman, 1985).

The output growth accelerates if scared resources shift from lower productivity local sector to greater productivity export sector. Economic theory also signifies that economic growth is mainly due to exports because it provides a source of foreign exchange in the country. It is very important when domestic savings in the country are inadequate. Additionally, economic growth may also trigger in the presence of efficient market size expansion, this leads towards sufficient technological change and higher capital formation. Moreover, the possibility of negative linkage between economic growth and exchange rate may exist, meaning that, rise in economic output level decline in the export growth level. For instance, growth level may decrease even if the export growth, increase due to some other factors like inward foreign direct investment (Jung & Marshall, 1985). This result possible due to various distortions in the economic process. On the same note, the decrease in economic growth in the presence of export growth occurs when growth in exports is appreciating against the domestic consumption (Dodaro, 1993).

The main theoretical and conceptual framework of this study is represents in Figure 3.1.

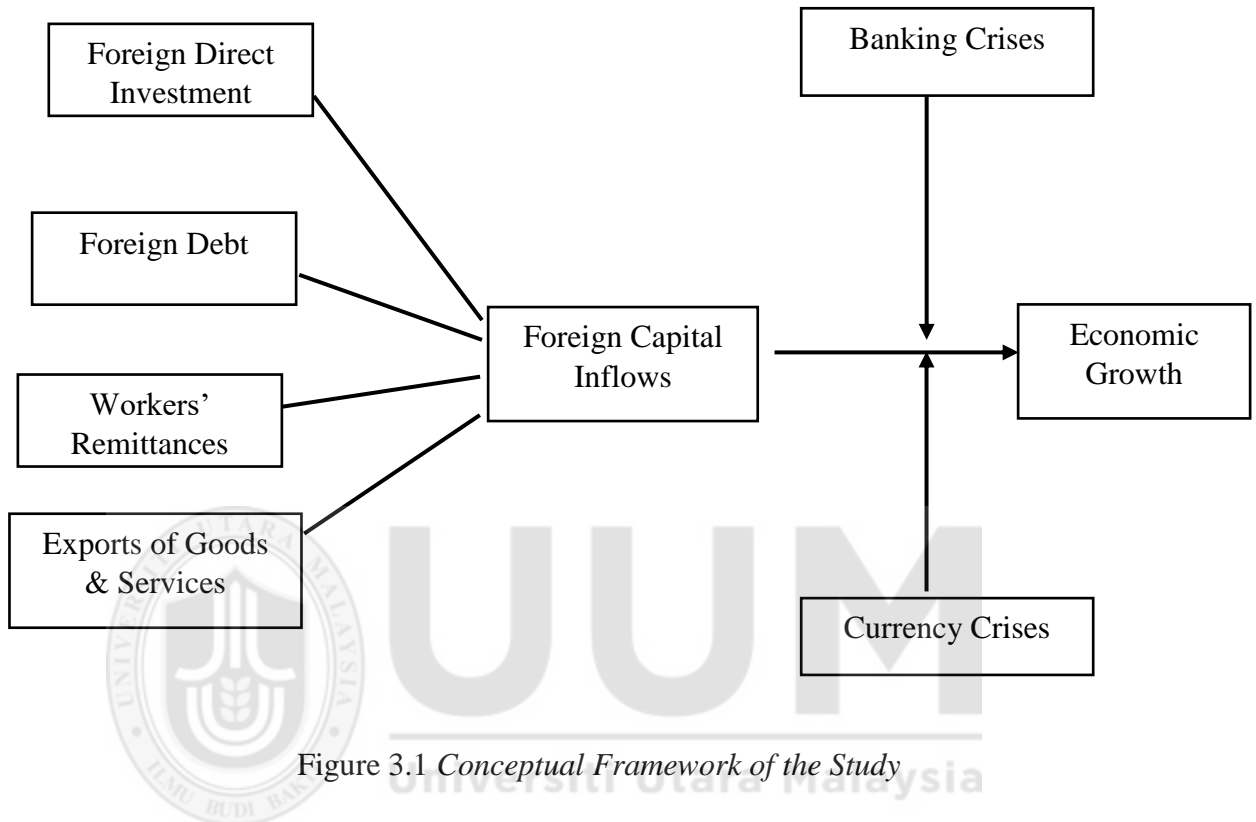


Figure 3.1 *Conceptual Framework of the Study*

3.3 Methodology

This study employs a quantitative method of analysis by using the correlational research design to analyze the relationship between foreign capital inflows, banking crises, currency crises and economic growth. We collect the balanced panel data of 96 countries and group them on the basis of different income levels. The final sample of this study consists of 10 low income countries, 23 lower middle income countries, 30 upper middle income countries and 33 high income countries. The countries are pooled in different income level based on the criteria of World Bank.

Each year on July 1, the World Bank revises analytical classification of the world's economies based on estimates of gross national income (GNI) per capita for the previous year. The updated GNI per capita estimates are also used as input to the World Bank's operational classification of economies that determines lending eligibility. As of 1 July 2014, low-income economies are defined as those with a GNI per capita, calculated using the *World Bank Atlas* method, of \$1,045 or less in 2013; middle-income economies are those with a GNI per capita of more than \$1,045 but less than \$12,746; high-income economies are those with a GNI per capita of \$12,746 or more. Lower-middle-income and upper-middle-income economies are separated at a GNI per capita of \$4,125.

To achieve this objective, the panel model is estimated by using the Cobb-Douglas production function framework. This term of panel data refers to a collection of multi-dimensional data set observed over multiple time periods. It is also called longitudinal studies. Panel data should not be confused with data obtained from panel of experts, i.e. country risk analysis when a panel of experts are set up and presented with a question for the experts to answer. The panel data has the form:

$$Y = \alpha_0 + \beta_1 X + U \quad \text{Eq (3.1)}$$

where α = constant, β = slope, and u = random error.

$$U = \mu u + v \quad \text{Eq (3.2)}$$

where μ = mean of random error distribution, and v = random error.

The panel data is divided into two different sort of dataset i.e. balanced panel dataset and unbalanced panel dataset. A balanced data set is a set that contains all elements observed in all time frame. Whereas unbalanced data is a set of data where certain years, the data category is not observed. Recall that in the balanced panel data, the error term is $U = \mu u + v$; however, in the unbalanced panel data set, there is an additional error term in “ U ”; therefore:

$$U = \mu u + v + e \quad \text{Eq (3.3)}$$

where “ e ” is the additional disturbance from the unbalanced random effect term. The unbalanced panel data begins to have a problem when the value of “ e ” exerts significant effect on the system, thus, inflating error term for the basic equation of panel data i.e.

$$Y = \alpha_0 + \beta_1 X + U.^{16} \quad \text{Eq (3.4)}$$

3.4 Model Specification

The dependent variable in our empirical specification is “Economic Growth” which is defined as an increase in the amount of goods and services produced per head of the population over a period of time. The fundamental objective of the calculation of productivity is to identify the production variation that cannot be attributed to the change in the quantities of inputs. In available literature, the majority of studies used the Cobb-Douglas production function framework to analyze the economic growth in different economies. The Cobb-Douglas production function is a particular functional form of the production function, widely used to represent the technological relationship

¹⁶ For details see, Baltagi (2005) and Cameron and Trivedi (2009).

between the amounts of two or more inputs, particularly physical capital and labor, and the amount of output that can be produced by those inputs (Cobb & Douglas, 1928).

In simple words, the Cobb-Douglas function claims that the production capacity of any economy is based on the availability of physical capital (K) and labor force (L) of that economy. Furthermore, there are some additional variables (especially technology) which contribute in the production of that economy which represents through 'A'. In this study, we use the following simple form Neo-Classical growth model by using the Cobb-Douglas production function framework to investigate the relationship between foreign capital inflows and economic growth:

$$Y = f(L, K, A) \quad \text{Eq (3.5)}$$

Where Y is the real gross domestic product or per capita income, L is the labor force, K is the capital stock and A is the total factor productivity. It is assumed that impact of foreign capital inflows on economic growth operates through A ¹⁷. This study is using four major items of foreign capital inflows, which play a major role in the economic development namely; foreign direct investment, workers' remittances, external public debt and exports of goods and services. These four items are the main sources of foreign capital inflows for the countries. In the remaining paragraphs of this section, we discuss those studies which use the Cobb-Douglas function to analyze the relationship between FCI and EG.

In past studies, there are several researches use Cobb-Douglas production function framework to analyze the impact of FDI on economic growth. For Instance, Barrell and

¹⁷ See, (Kohpaiboon, 2003; Jawaid and Raza, 2012; Jawaid and Raza, 2014).

Pain (1997) argue that FDI brings diffusion of ideas and provide new and innovated production ways to improve the production process and the goods and services of both MNCs and local firms. Vudayagiri N Balasubramanyam et al. (1999) analyze the relationship between FDI and EG and conclude that FDI has an important influence over growth performance of the economies. Akinlo (2004) argue that the FDI does not have a significant influence over EG. The results confirm that the attractive foreign direct investment is not a growth enhancing. Marwah and Tavakoli (2004) also use the Cobb-Douglas production function framework and confirm the positive impact of FDI on EG.

Alfaro et al. (2010); Choong, Baharumshah, Yusop, and Habibullah (2010) and Hermes and Lensink (2003) claims that the positive externalities of FDI on EG is higher in financially developed economies as compare to less financially developed economies. Anwar and Sun (2011) conclude that the positive influence of FDI on EG is based on the openness of the economy and its real effective exchange rate. Omri and Kahouli (2014) also use the Cobb-Douglas function to analyze the relationship between FDI and EG by using the panel data of 65 countries from the period of 1990-2011. Results conclude the bi-directional causal relationship between FDI and EG. In the recent case of Tunisia, Belloumi (2014) conclude the insignificant relationship between FDI and EG after using the Cobb-Douglas function.

There are several other researches who use the Cobb-Douglas production function framework to analyze the impact of external debt, remittance and exports on economic growth. Bakar and Hassan (2011) conclude the positive influence of EXD on EG in Malaysia in both short and long run. Choong et al. (2010) conclude the negative

influence of EXD on EG, but the stock market development at threshold level may transformed this influence into positive. Karagol (2012) argue that external debt is an effective policy variable in Turkey, as it is having a significant negative influence over economic growth in Turkey. Akram (2015) also concludes the negative impact of EXD on EG in Philippines. It is also concluded that the heavy rely on the EXD is not beneficial for developing economies. In a recent study of Eberhardt and Presbitero (2015) also use the Cobb-Douglas function and conclude the negative relationship between EXD and EG.

As for in the export evidence, Vudayagiri N Balasubramanyam et al. (1999) and Marwah and Tavakoli (2004) use the Cobb-Douglas function to confirm the positive influence of EXP on EG. Akinlo (2004) use the Cobb-Douglas function to confirm the positive influence of EXP on EG in Nigeria during the period of 1970-2001. Shahbaz (2012) also conclude in the favor of export promote growth hypothesis in Pakistan. In the case of upper middle income countries, Dao (2014) and Máñez, Rochina-Barrachina, and Sanchis-Llopis (2015) conclude that the export promotion policies play a vital role to enhance the EG in the upper middle income countries.

As for the evidence of remittances, In the case of Central and Eastern European (CEE) countries, Jawaid and Raza (2014) conclude the positive influence of REM on economic growth in Korea, whereas negative relationship is found in China. Ramirez (2013); Guha (2013) and Kumar (2013) also conclude in the favor of the positive impact of REM on EG. Goschin (2014) conclude the positive influence of REM on EG in both

absolute and relative terms. In the case of South Asia, Jawaid and Raza (2014) conclude the positive influence of REM on EG in Bangladesh, Sri Lanka, India and Nepal, but negative impact of REM on EG is found in Pakistan. In the specific time series case of Kenya, Kumar (2014) conclude the positive impact of REM on EG in the long run, while negative relationship is found in short run.

The above discussion confirm that the several recent studies have used the Cobb-Douglas production function frame work to analyze the relationship between foreign capital inflows and economic growth. We use the log linear growth model to determine the models of economic growth. Therefore, the models for empirical estimation based on Cobb-Douglas function is developed as follow:

$$GDP_{i,t} = \beta_0 + \beta_1 LAB_{i,t} + \beta_2 CAP_{i,t} + \beta_3 HED_{i,t} + \beta_4 INF_{i,t} + \beta_5 DCF_{i,t} + \beta_6 GCE_{i,t} + \beta_7 FDI_{i,t} + \varepsilon_{i,t} \quad \text{Eq (3.6)}$$

$$GDP_{i,t} = \beta_0 + \beta_1 LAB_{i,t} + \beta_2 CAP_{i,t} + \beta_3 HED_{i,t} + \beta_4 INF_{i,t} + \beta_5 DCF_{i,t} + \beta_6 GCE_{i,t} + \beta_7 REM_{i,t} + \varepsilon_{i,t} \quad \text{Eq (3.7)}$$

$$GDP_{i,t} = \beta_0 + \beta_1 LAB_{i,t} + \beta_2 CAP_{i,t} + \beta_3 HED_{i,t} + \beta_4 INF_{i,t} + \beta_5 DCF_{i,t} + \beta_6 GCE_{i,t} + \beta_7 EXD_{i,t} + \varepsilon_{i,t} \quad \text{Eq (3.8)}$$

$$GDP_{i,t} - EXP_{i,t} = \beta_0 + \beta_1 LAB_{i,t} + \beta_2 CAP_{i,t} + \beta_3 HED_{i,t} + \beta_4 INF_{i,t} + \beta_5 DCF_{i,t} + \beta_6 GCE_{i,t} + \beta_7 EXP_{i,t} + \varepsilon_{i,t} \quad \text{Eq (3.9)}$$

Whereas ε_t is the error term. GDP is a real gross domestic product, LAB is the total labor force and CAP represents the capital stock which is measured by real gross fixed

capital formation, *FDI* represents the real foreign direct investment, *REM* represents the real amount of workers' remittances, *EXD* represents the real value of external debts and *EXP* represents the real value of exports of goods and services. In some empirical studies, researchers create an objection on introducing exports as an additional factor of production in a Cobb-Douglas type production function. Authors who have used this framework of analysis have also felt the need to fend off the criticism that the strong positive coefficient for their export growth variable is due, not to any causal relationship between exports and GDP, but to the fact that exports are a component of GDP. In dealing with this problem, we use the methodology adopted by (Feder, 1983; Sheehey, 1990) and compute the dependent variable of GDP by excluding the exports from gross domestic product to get the GDP net export variable in the equation of exports i.e. 3.9, 3.13, & 3.17.

We also use the set of control variables based on the potential and significant determinants of economic growth to control their effects in our model. These important determinates of economic growth as a control variable are adopted from the seminal work of Levine and Renelt (1992) and Barro (1996). These control variables are also endorsed by various researchers as important determinants of economic growth and still in the recent studies these variables are using as main determinates of economic growth such as; (Delgado, Henderson, & Parmeter, 2014; Eggoh & Khan, 2014; Glewwe, Maïga, & Zheng, 2014; Law & Singh, 2014; Manamperi, 2014; Martins & Veiga, 2014; Menyah, Nazlioglu, & Wolde-Rufael, 2014; Teles & Mussolini, 2014)

In the above mentioned equation we control the effect of human capital, inflation, availability of domestic credit and government consumption pattern in the economy. *HED* is a proxy of human capital which is measured by number of higher education enrollment, *INF* is inflation which is measured by consumer price index, *DCF* is a real amount of credit provided by financial sector and *GCE* is a real government consumption expenditure. Furthermore, in this study we use two variables of financial crises i.e. banking crisis and currency crisis. *CRC* is a dummy variable for currency crises, we assign value ‘1’ if the year experiences currency crises and zero otherwise. *BAC* is a dummy variable for banking crisis, we assign value ‘1’ if the year experiences banking crises and zero otherwise. The positive sign is expected for *LAB* and *CAP* while, the signs of *FDI*, *REM*, *EXD*, *EXP*, *GRT*, *CRC* and *BAC* are to be determined. The model to investigate the impact of foreign capital inflows on economic growth in the presence of currency crises is estimated by using the following framework:

$$GDP_{i,t} = \beta_0 + \beta_1 LAB_{i,t} + \beta_2 CAP_{i,t} + \beta_3 HED_{i,t} + \beta_4 INF_{i,t} + \beta_5 DCF_{i,t} + \beta_6 GCE_{i,t} + \beta_7 FDI * CRC_{i,t} + \varepsilon_{i,t}$$

Eq (3.10)

$$GDP_{i,t} = \beta_0 + \beta_1 LAB_{i,t} + \beta_2 CAP_{i,t} + \beta_3 HED_{i,t} + \beta_4 INF_{i,t} + \beta_5 DCF_{i,t} + \beta_6 GCE_{i,t} + \beta_7 REM * CRC_{i,t} + \varepsilon_{i,t}$$

Eq (3.11)

$$GDP_{i,t} = \beta_0 + \beta_1 LAB_{i,t} + \beta_2 CAP_{i,t} + \beta_3 HED_{i,t} + \beta_4 INF_{i,t} + \beta_5 DCF_{i,t} + \beta_6 GCE_{i,t} + \beta_7 EXD * CRC_{i,t} + \varepsilon_{i,t}$$

Eq (3.12)

$$GDP_{i,t} - EXP_{i,t} = \beta_0 + \beta_1 LAB_{i,t} + \beta_2 CAP_{i,t} + \beta_3 HED_{i,t} + \beta_4 INF_{i,t} + \beta_5 DCF_{i,t} + \beta_6 GCE_{i,t} + \beta_7 EXP * CRC_{i,t} + \varepsilon_{i,t}$$

Eq (3.13)

Whereas $FDI * CRC$, $REM * CRC$, $EXD * CRC$, and $EXP * CRC$ are respectively the interaction terms of foreign direct investment, workers' remittances, external debt, and exports of goods and services with currency crises. The model to investigate the impact of foreign capital inflows on economic growth in the presence of banking crises is estimated by using the following framework:

$$GDP_{i,t} = \beta_0 + \beta_1 LAB_{i,t} + \beta_2 CAP_{i,t} + \beta_3 HED_{i,t} + \beta_4 INF_{i,t} + \beta_5 DCF_{i,t} + \beta_6 GCE_{i,t} + \beta_7 FDI * BAC_{i,t} + \varepsilon_{i,t}$$

Eq (3.14)

$$GDP_{i,t} = \beta_0 + \beta_1 LAB_{i,t} + \beta_2 CAP_{i,t} + \beta_3 HED_{i,t} + \beta_4 INF_{i,t} + \beta_5 DCF_{i,t} + \beta_6 GCE_{i,t} + \beta_7 REM * BAC_{i,t} + \varepsilon_{i,t}$$

Eq (3.15)

$$GDP_{i,t} = \beta_0 + \beta_1 LAB_{i,t} + \beta_2 CAP_{i,t} + \beta_3 HED_{i,t} + \beta_4 INF_{i,t} + \beta_5 DCF_{i,t} + \beta_6 GCE_{i,t} + \beta_7 EXD * BAC_{i,t} + \varepsilon_{i,t}$$

Eq (3.16)

$$GDP_{i,t} - EXP_{i,t} = \beta_0 + \beta_1 LAB_{i,t} + \beta_2 CAP_{i,t} + \beta_3 HED_{i,t} + \beta_4 INF_{i,t} + \beta_5 DCF_{i,t} + \beta_6 GCE_{i,t} + \beta_7 EXP * BAC_{i,t} + \varepsilon_{i,t}$$

Eq (3.17)

Whereas $FDI * BAC$, $REM * BAC$, $EXD * BAC$, and $EXP * BAC$ are respectively the interaction terms of foreign direct investment, workers' remittances, external debt, and exports of goods and services with banking crises.

3.5 Estimation of the Procedure

In this section, we discussed the different estimations procedures we used in the data analysis to examine the relationship between foreign capital inflows, banking crises, currency crises and economic growth.

3.5.1 Panel Unit Root and Co-Integration Test

We use, Im, Pesaran and Shin (2003) unit root test to analyze the stationary properties of our considered variables. The IPS test considers the unobserved heterogeneity among the cross sections and also eliminates the issues of serial correlation. The IPS unit root test has the best properties to judge the problem of a unit root in the small sample. The desirable results for unit root test include that the variables should be non-stationary at the level and become stationary at the first difference.

We applied two methods of panel cointegration i.e. Pedroni cointegration (1999) and Kao cointegration (1999) to analyze the long run relationship among foreign capital inflows, banking crisis, currency crisis and economic growth in low income countries. These tests are based on the two-step residual based cointegration tests of Engle-Granger (1987). The Pedroni cointegration based on a seven statistical value. The Pedroni cointegration is useful to control the biasness of country size and also solve the issues of heterogeneity (Das & Choudhary, 2011). The Kao cointegration method follows the same basic approach as used in the Pedroni cointegration, but also control the issues of cross-section specific intercepts and homogenous coefficients.

3.5.2 Fixed Effects Model

Fixed effects model (FE) is used if one is interested in investigating the effects of variables that vary over time. The FE examines the relationship between predictor and outcome variables within an entity such as a country, firm, industry, person and so on. Each entity possesses its own characteristics which may or may not affect the predictor variables. For instance, a country's ability to attract foreign capital inflows might have

impact on its economic growth. One of the assumptions of the FE is that there is a correlation between the entity's error and the predictor variables. Put differently, the FE assumes that something within the entity might affect or bias the predictor/outcome variables, which needs to be controlled. Thus, the FE eliminates the influence of the time-variant characteristics from the predictor variables, making it possible for one to evaluate the net impact of the predictors.

Another assumption of the FE is that time-invariant characteristics (such as culture, religion, gender, etc.) are peculiar to a particular entity and therefore should not be correlated with other entity's or entities' characteristics. Since each/individual entity differs from others, its error term and constant (which captures individual characteristics) should not be correlated with others. However, if the error terms are correlated the FE is not appropriate, and any conclusion or inference drawn from it will be misleading. A suitable model to use in this case would be the random effects model.

The FE model is specified as:

$$Y_{it} = \beta_1 X_{it} + \alpha_i + u_{it} \quad \text{Eq (3.18)}$$

Where:

Y_{it} is the dependent variable for country i at time t ;

X_{it} is the explanatory variable for country i at time t ;

i refers to a given country and t a given year;

β_1 is the coefficient for that explanatory variable;

α_i refers to all unobserved, time-constant factors in country i that affect Y_{it} .

Also, α_i ($i=1,2,\dots,n$) is the unknown intercept for each entity (n entity-specific intercepts);

u_{it} is the error term and refers to unobserved factors that change over time and affect Y_{it} .

Moreover, since the FE controls for all time-invariant differences between the entities, the estimated coefficients of the FE models will be unbiased. However, given that FE is developed to study the causes of variations within an entity, it is therefore not suitable to examine time-invariant causes of the dependent variables. In the same manner, a time-invariant characteristic does not lead to such a change because it is constant for each entity.

3.5.3 Random Effects Model

The random effects model (RE) is employed if the differences across the entities (country, firm, industry, person, etc.) have some effects on the dependent variable. The RE assumes that variation across entities is random and uncorrelated with the predictor variables. In other words, the entity's error term is assumed to be uncorrelated with the predictor variables, and permits the inclusion of time-invariant variables such as race, culture, etc., in the model like any other independent variables. But these variables are absorbed by the constant term in the FE model. In using the RE, one is expected to specify the individual characteristics which might or might not affect the predictor variables. However, some variables might be unavailable, resulting in omitted

variable(s) bias in the model. Fortunately, with the RE conclusion can be generalized beyond the sample employed in the model. The RE model is specified as:

$$Y_{it} = \beta X_{it} + u_{it} + \alpha_i + \varepsilon_{it} \quad \text{Eq (3.19)}$$

Where u_{it} is between-entity error and ε_{it} the within-entity error.

During the estimation exercise, we conducted a number of tests that included the Redundant Fixed Effects test and Hausman test. For instance, the Redundant Fixed Effects test was conducted to test the hypothesis that time-specific effects are present in the time series and cross section data. This test enables us to determine if the pooled Ordinary Least Squares (OLS) estimation is appropriate or not and whether one should use the FE/RE estimation. Similarly, the Hausman test was performed to determine if the RE estimates are correct and preferred to the FE estimates.

Finally, to achieve the objectives of this study, we estimated eight panel models: (i) influence of foreign direct investment on economic growth (ii) influence of banking crisis and currency crisis on the relationship of foreign direct investment and economic growth (iii) influence of external debt on economic growth (iv) influence of banking crisis and currency crisis on the relationship of external debt and economic growth (v) influence of workers' remittances on economic growth (vi) influence of banking crisis and currency crisis on the relationship of workers' remittances and economic growth (vii) influence of exports of goods and services on economic growth (viii) influence of banking crisis and currency crisis on the relationship of exports of goods and services and economic growth. Thus, we introduced interaction terms of banking crisis (BAC)

and currency crisis (CRC) with four different type of foreign capital inflows i.e. foreign direct investment ($FDI*BAC$) & ($FDI*CRC$), external debt ($EXD*BAC$) & ($EXD*CRC$), workers' remittances ($REM*BAC$) & ($REM*CRC$) and exports of goods and services ($EXP*BAC$) & ($EXP*CRC$). Also, since income level differs across countries, we attempted to ascertain whether the effects of foreign capital inflows on economic growth depends on different income levels.

3.6 Description of Variables

EXD is the real external debt which can be defined as the sum or amount which is payable to the external or non-residents of any particular country. The said sum can be in goods, currency or services. This sum can be public or private, guaranteed or non-guaranteed, short term or long term, and the use of credit by International Monetary Funds (IMF). *FDI* is the foreign direct investment which is the investment done by the investor in an enterprise of any country other than home, in order to have significant share in the management of the said enterprise (normally more than 10% of the voting stock). It is the sum of short term and long term investments in the equity or the reinvestments of the earnings. This variable shows the net amount which means that it is the difference between the new amounts invested and the amounts disinvested from the country as % of GDP which means divided by GDP.

EXP is the exports of goods and services which can be represents the sum of the goods and services exported to the whole world. It is sum of all goods and services including merchandise, transportation, insurance, royalties, and any type of services either

provided to public or private sector in rest of the world. This sum excludes the transfer payments, employees' compensation and investment which was used to called factor services. The data is measured as % of GDP which means that divided by the GDP. *REM* is the workers' remittances, it is sum of employees' compensation which is made against their services to the nonresident entities or employed in the nonresident countries and the personal transfers which includes the transfers between the residents and the non-residents' households either in cash or in kind. The data is measured as % of GDP which means that divided by the GDP.

GDP is the GDP per capita which is gross domestic product divided by midyear population. GDP is sum of the values of the all goods and services produced in an economy or the value addition being done in an economy including the taxes and excluding subsidies if any. *CAP* is the gross fixed capital formation, it is sum of the amount invested in the buildings, schools, roads, plants, equipment, land improvements, industrial buildings and the development in the infrastructure. The amount was taken as a % of GDP which means that the sum is divided by the GDP. *LAB* is the total labor force, it is the sum of labor both employed and unemployed that is available for the production of goods and services in a specific period of time. It includes people having age 15 years and older meeting the requirements of the International Labor Organization. It includes the armed forces, unemployed, and people seeking for the job for the very first time.

HED is the total number of enrollment in higher education institutes at tertiary level. Tertiary education is the educational level following the completion of a school providing a secondary education. The world bank defines tertiary education as including universities as well as institutions that teach specific capacities of higher learning such as colleges, technical training institutes, community colleges, research laboratories, centers of excellence and distance learning centers. *INF* is the inflation which is measured by consumer price index, it reflects changes in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly.

DOC is the domestic credit provided by the financial sector includes all credit to various sectors on a gross basis, with the exception of credit to the central government. The financial sector includes monetary authorities and deposit money banks, as well as other financial corporations where data are available (including corporations that do not accept transferable deposits but do incur such liabilities as time and savings deposits). Examples of other financial corporations are finance and leasing companies, money lenders, insurance corporations, pension funds, and foreign exchange companies. *GCE* is the general government consumption expenditure includes all government current expenditures for purchases of goods and services (including compensation of employees). It also includes most expenditures on national defense and security, but excludes government military expenditures that are part of government capital formation.

BAC is the dummy variable for banking crises, we assign value ‘1’ if the year experiences banking crises and zero otherwise. The data for the banking crisis is gathered from Gerard Caprio and Klingebiel (2002) and L. Laeven and Valencia (2008); M. L. Laeven and Valencia (2010) and L. Laeven and Valencia (2012). The data set of G Caprio and Klingebiel (2003) contains annual dataset (1970–2002) includes information on 117 episodes of systemic banking crises in 93 countries and on 51 episodes of borderline and non-systemic banking crises in 45 countries. Gerard Caprio and Klingebiel (2002) define a systemic banking crisis as a situation where the aggregate value of the banking system liabilities exceeds the value of its assets.

The L. Laeven and Valencia (2008); M. L. Laeven and Valencia (2010) and L. Laeven and Valencia (2012) annual dataset (1970–2011) covers systemically important banking crises (147 episodes) in over 100 countries all over the world and provides information on crisis management strategies. A banking crisis is considered to be systemic if the following two conditions are met: ‘(1) Significant signs of financial distress in the banking system (as indicated by significant bank runs, losses in the banking system, and/or bank liquidations); and (2) Significant banking policy intervention measures in response to significant losses in the banking system.’ The first year that both criteria are met is considered to be the starting year of the banking crisis, and policy interventions in the banking sector are considered significant if at least three out of the following six measures were used: ‘(1) extensive liquidity support; (2) bank restructuring costs; (3) significant bank nationalizations; (4) significant guarantees put in place; (5) significant asset purchases; and (6) deposit freezes and bank holidays.’

In this study, we combine the datasets of Gerard Caprio and Klingebiel (2002) and L. Laeven and Valencia (2008); M. L. Laeven and Valencia (2010) and L. Laeven and Valencia (2012) and prepare one aggregate index of systemic banking crises by assigning assign value ‘1’ if the year experiences banking crises and zero otherwise. There are many studies have been done which used the same data of systemic banking crisis in different theoretical and empirical scenarios.

CRC is a dummy variable for currency crises, we assign value ‘1’ if the year experiences currency crises and zero otherwise. The data for the currency crisis is gathered from Glick and Hutchinson (2001); L. Laeven and Valencia (2008); M. L. Laeven and Valencia (2010) and L. Laeven and Valencia (2012). Glick and Hutchinson (2001) construct an indicator of currency crises based on “large” changes in an index of currency pressure, defined as an average of real exchange rate changes. The dataset of L. Laeven and Valencia (2008); M. L. Laeven and Valencia (2010) and L. Laeven and Valencia (2012) is compiled using the authors’ calculations. The annual dataset (1970–2011) includes 218 currency crises identified in over 100 countries all over the world. A currency crisis is defined as ‘a nominal depreciation of the currency vis-à-vis the U.S. dollar of at least 10 percentage points higher than the rate of depreciation in the year before.

3.7 Research Hypothesis

The research Hypothesis of this study are as follows:

H1: foreign direct investment has a positive and significant impact on economic growth in low, lower middle, upper middle and high income countries.

H2: external debt has a positive and significant impact on economic growth in low, lower middle, upper middle and high income countries.

H3: workers' remittances has a positive and significant impact on economic growth in low, lower middle, upper middle and high income countries.

H4: exports of goods and services has a positive and significant impact on economic growth in low, lower middle, upper middle and high income countries.

H5: The currency and banking crisis deteriorate the impact of foreign direct investment on economic growth in low, lower middle, upper middle and high income countries.

H6: The currency and banking crisis deteriorate the impact of external debt on economic growth in low, lower middle, upper middle and high income countries.

H7: The currency and banking crisis deteriorate the impact of workers' remittances on economic growth in low, lower middle, upper middle and high income countries.

H8: The currency and banking crisis deteriorate the impact of exports of goods and services on economic growth in low, lower middle, upper middle and high income countries.

3.8 Sources of Data

This research work uses a panel data of 96 countries and group them on the basis of different income levels. The final sample of this study consists of 10 low income countries, 23 lower middle income countries, 30 upper middle income countries and 33 high income countries.

Table 3.1: List of 96 Low, Lower Middle, Upper Middle and High Income Countries

Low Income		14	Moldova	15	Jordan	9	France
1	Benin	15	Morocco	16	Kazakhstan	10	Germany
2	Burkina Faso	16	Nigeria	17	Macedonia, FYR	11	Greece
3	Cambodia	17	Pakistan	18	Malaysia	12	Hungary
4	Guinea	18	Philippines	19	Mauritius	13	Iceland
5	Malawi	19	Sri Lanka	20	Mexico	14	Ireland
6	Mozambique	20	Sudan	21	Paraguay	15	Israel
7	Nepal	21	Swaziland	22	Panama	16	Italy
8	Niger	22	Ukraine	23	Peru	17	Japan
9	Rwanda	23	Vanuatu	24	Romania	18	Korea, Rep.
10	Tanzania	Upper Middle Income		25	South Africa	19	Netherlands
Low Middle Income		1	Albania	26	St. Lucia	20	New Zealand
1	Bangladesh	2	Algeria	27	St. Vincent and the Grenadines	21	Norway
2	Kenya	3	Azerbaijan	28	Thailand	22	Poland
3	Armenia	4	Belarus	29	Tunisia	23	Portugal
4	Bolivia	5	Belize	30	Turkey	24	Russian Federation
5	Cameroon	6	Botswana	High Income		25	Seychelles
6	Egypt, Arab Rep.	7	Brazil	1	Argentina	26	Slovak Republic
7	El Salvador	8	Bulgaria	2	Australia	27	Slovenia
8	Ghana	9	China	3	Austria	28	Spain
9	Guatemala	10	Colombia	4	Croatia	29	Switzerland
10	Honduras	11	Costa Rica	5	Denmark	30	Sweden
11	India	12	Dominican Republic	6	Czech Republic	31	United Kingdom
12	Indonesia	13	Ecuador	7	Estonia	32	United States
13	Kyrgyz Republic	14	Grenada	8	Finland	33	Venezuela, RB

The data for labor force, gross fixed capital formation, foreign direct investment, external debt, workers' remittances, exports of goods and service and gross domestic product per Capita is collected from the database of world development indicators (WDI), managed by World Bank. The data for the banking crisis is gathered from Gerard Caprio and Klingebiel (2002); L. Laeven and Valencia (2008); M. L. Laeven and Valencia (2010) and L. Laeven and Valencia (2012). The data for the currency crisis is

gathered from Glick and Hutchinson (2001); L. Laeven and Valencia (2008); M. L. Laeven and Valencia (2010) and L. Laeven and Valencia (2012). The table 3.1 represents the number of countries included in the sample.

3.9 Summary of Chapter

In chapter three, the theoretical framework for the study was highlighted. The framework was developed with a view to creating an understanding on the link foreign capital inflows (foreign direct investment, exports of goods and services, workers' remittances and external debt), economic growth, banking crises and currency crises. The development of the framework was followed by the specification of models that were employed to analyze the relationship between foreign capital inflows, economic growth, banking crises and currency crises in high income, upper middle income, lower middle income and low income countries. This chapter also discussed the details about the statistical and econometric techniques which will be used in this study. Furthermore, the description of all variables, data sources, sample size and period are also discussed in this section.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

In this chapter, we present the results of empirical estimations and further discuss these results in the theoretical and conceptual context. We use the Im, pesaran & shin (IPS) unit root test to analyze the stationary properties of all variables. We also use Pedroni cointegration and Kao (Engle-Granger based) cointegration to analyze the long run relationship between our considered variables. Furthermore, we use fixed effect and random effect estimation procedures to analyze the long run impact of foreign capital inflows on economic growth. In addition, the study investigates whether the impact of foreign capital inflows on economic growth depends on different income levels. Lastly, the study also examines the effects of foreign capital inflows on economic growth in the presence of currency and banking crisis.

4.2 Descriptive Statistics

Before estimating the model, the descriptive statistics of all the variables used in this study were computed. The Table 4.1 shows the properties of the variables of low income countries. The gross domestic product (GDP) has a mean value of 8.09 billion US Dollar for all the countries in the sample and its standard deviation is 6.40 billion. The maximum value of gross domestic product of 38.20 billion is reported in Tanzania in year of 2013, whereas, the minimum value of 1.64 billion is reported in Rwanda in year of 1995. Labor force (LAB) has a mean value of 7.50 million and the standard deviation

is 4.94 million. The Maximum value of 24.51 million is reported in Tanzania in year of 2013, whereas, the minimum value of 2.38 million is reported in Benin in year of 1995. The mean value of gross fixed capital formation (CAP) for 190 observations is 1.50 billion US Dollar with a standard deviation of 1.97 billion. The minimum value of 0.13 billion is reported in Niger in year of 1995, whereas, the maximum value of 13.5 billion is reported in Tanzania in year of 2013. The higher education (HED) enrollment shows a mean value of 0.058 million with a minimum and maximum value of 0.001 & 0.461 million and a standard deviation is 0.080 million.

Table 4.1: Summary Statistics for Variables of Low Income Countries

Variables	Mean	Std. Dev.	Minimum	Maximum	Observations
GDP	8.090	6.400	1.640	38.200	190
LAB	7.503	4.940	2.384	24.506	190
CAP	1.500	1.970	0.132	13.500	190
HED	0.058	0.080	0.001	0.461	190
INF	10.552	12.612	-2.406	83.326	190
DCF	16.909	13.564	1.739	69.068	190
GCE	0.941	1.060	0.133	7.240	190
EXP	1.580	1.690	0.067	9.500	190
REM	0.231	0.729	0.001	5.590	190
FDI	0.312	0.755	0.001	6.700	190
EXD	3.020	2.120	0.434	13.000	190

Note: GDP = Gross domestic Product; LAB = Labor Force; CAP = Gross fixed capital Formation; HED = Higher education Development; INF = Inflation; DCF = Domestic credit provided by financial sector; GCE = General government final consumption expenditure; EXP = Export; REM = Remittances; FDI = Foreign direct investment; EXD = External Debt.

The inflation (INF) ranges from a minimum of -2.41% to a maximum of 83.33% with a mean of 10.55% and a standard deviation of 12.61%. The minimum inflation is Rwanda in year of 1999, whereas, the maximum value is reported in Malawi in year of 1995. The domestic credit provided by financial sector (DCF) has a mean value of 16.91% of GDP and its standard deviation is 13.56% for all the countries. The maximum value of

domestic credit provided by financial sector (DCF) of 69.07% is reported in Nepal in year of 2009 and the minimum value of 1.74% is reported in Mozambique in year of 1996. General government final consumption expenditure (GCE) has a mean value of 0.94 billion US Dollar and the standard deviation is 1.06 billion. The maximum value of 7.24 billion is reported in Tanzania in year of 2013 and the minimum value of 0.13 billion is reported in Rwanda in year of 1995. The mean value of export for 190 observations is 1.58 billion US Dollar with a standard deviation of 1.69 billion. The minimum values of 0.07 billion is reported in Rwanda in year of 1995 and the maximum value of 9.50 billion is reported in Cambodia in year of 2013. The remittances (REM) shows a mean value of 0.23 billion US Dollar with a minimum and maximum value of 0.001 & 5.59 billion and a standard deviation 0.73 billion. The maximum value is reported in Nepal in year of 2013. The foreign direct investment (FDI) shows a mean value of 0.31 billion US Dollar with a minimum and maximum value of 0.001 & 6.70 billion and a standard deviation 0.76 billion. The maximum value is reported in Mozambique in year of 2013. The external debt (EXD) has a mean value of 3.02 billion US Dollar and its standard deviation is 2.12 billion for all the countries. The maximum value of external debt (EXD) of 13.00 billion is reported in Tanzania in year of 2013, whereas, the minimum value of 0.43 billion is reported in Rwanda in year of 2006.

The Table 4.2 shows the properties of the variables of lower middle income countries. The gross domestic product (GDP) has a mean value of 132.00 billion US Dollar for all the countries in the sample and its standard deviation is 276.00 billion. The maximum value of gross domestic product (GDP) is 2050.00 billion and the minimum value is

0.44 billion. Labor force (LAB) has a mean value of 37.30 million and the standard deviation is 89.64 million. The Maximum value is 488.00 million and the minimum value is 0.08 million. The mean value of gross fixed capital formation (CAP) for 437 observations is 25.10 billion US Dollar with a standard deviation of 73.20 billion and minimum and maximum values of 0.04 and 618 billion respectively. The higher education (HED) enrollment shows a mean value of 1.389 million with a minimum and maximum value of 0.001 & 35.07 million and a standard deviation is 3.72 million.

Table 4.2: Summary Statistics for Variables of Lower Middle Income Countries

Variables	Mean	Std. Dev.	Minimum	Maximum	Observations
GDP	132.000	276.000	0.440	2050.000	437
LAB	37.303	89.644	0.078	488.000	437
CAP	25.100	73.200	0.044	618.000	437
HED	1.389	3.720	0.001	35.071	437
INF	10.580	22.260	-0.791	376.746	437
DCF	40.287	22.744	1.819	112.677	437
GCE	11.000	25.900	0.044	210.000	437
EXP	24.900	55.700	0.098	468.000	437
REM	4.170	8.440	0.001	70.000	437
FDI	1.960	4.790	0.0004	43.400	437
EXD	30.200	53.700	0.048	430.000	437

Note: GDP = Gross domestic Product; LAB = Labor Force; CAP = Gross fixed capital Formation; HED = Higher education Development; INF = Inflation; DCF = Domestic credit provided by financial sector; GCE = General government final consumption expenditure; EXP = Export; REM = Remittances; FDI = Foreign direct investment; EXD = External Debt.

The inflation (INF) ranges from a minimum of -0.79% to a maximum of 376.75% with a mean of 10.58% and a standard deviation of 22.26%. The domestic credit provided by financial sector (DCF) has a mean value of 40.29% of GDP and its standard deviation is 22.74% for all the countries. The maximum value of domestic credit provided by financial sector (DCF) is 112.68% and the minimum value is 1.82%. General government final consumption expenditure (GCE) has a mean value of 11.00 billion US

Dollar and the standard deviation is 25.90 billion. The Maximum value is 210 billion and the minimum value is 0.04 billion. The mean value of export for 437 observations is 24.90 billion US Dollar with a standard deviation of 55.70 billion and minimum and maximum values of 0.10 and 468.00 billion respectively. The remittances (REM) shows a mean value of 4.17 billion US Dollar with a minimum and maximum value of 0.001 & 70.00 billion and a standard deviation of 8.44 billion. The foreign direct investment (FDI) shows a mean value of 1.96 billion US Dollar with a minimum and maximum value of 0.0004 & 43.40 billion and a standard deviation 4.79 billion. The external debt (EXD) has a mean value of 30.20 billion US Dollar and its standard deviation is 53.70 billion for all the countries. The maximum value of external debt (EXD) is 430.00 billion and the minimum value is 0.05 billion.

The Table 4.3 shows the properties of the variables of upper middle income countries. The gross domestic product (GDP) has a mean value of 301.00 billion US Dollar for all the countries in the sample and its standard deviation is 827.00 billion. The maximum value of gross domestic product (GDP) is 7670.00 billion and the minimum value is 0.45 billion. Labor force (LAB) has a mean value of 35.74 million and the standard deviation is 134 million. The Maximum value is 802.00 billion and the minimum value is 0.001 million. The mean value of gross fixed capital formation (CAP) for 570 observations is 74.30 billion US Dollar with a standard deviation of 341.00 billion and minimum and maximum values of 0.08 and 4340 billion respectively. The higher education (HED) enrollment shows a mean value of 0.669 million with a minimum and maximum value of 0.001 & 7.614 million and a standard deviation is 1.045 million.

Table 4.3: Summary Statistics for Variables of Upper Middle Income Countries

Variables	Mean	Std. Dev.	Minimum	Maximum	Observations
GDP	301.000	827.000	0.450	7670.000	570
LAB	35.741	134.000	0.0001	802.000	570
CAP	74.300	341.000	0.079	4340.000	570
HED	0.669	1.045	0.001	7.614	570
INF	13.783	59.382	-8.525	411.759	570
DCF	60.716	41.641	0.363	192.660	570
GCE	35.200	113.000	0.046	1290.000	570
EXP	66.300	203.000	0.124	2210.000	570
REM	1.810	3.780	0.001	26.900	570
FDI	7.750	27.100	0.007	291.000	570
EXD	52.000	98.600	0.117	871.000	570

Note: GDP = Gross domestic Product; LAB = Labor Force; CAP = Gross fixed capital Formation; HED = Higher education Development; INF = Inflation; DCF = Domestic credit provided by financial sector; GCE = General government final consumption expenditure; EXP = Export; REM = Remittances; FDI = Foreign direct investment; EXD = External Debt.

The inflation (INF) ranges from a minimum of -8.53% to a maximum of 411.759% with a mean of 13.78% and a standard deviation of 59.38%. The domestic credit provided by financial sector (DCF) has a mean value of 60.72% of GDP and its standard deviation is 41.64% for all the countries. The maximum value of domestic credit provided by financial sector (DCF) is 192.66% million and the minimum value is 0.36%. General government final consumption expenditure (GCE) has a mean value of 35.20 billion US Dollar and the standard deviation is 113.00 billion. The maximum value is 1290.00 billion and the minimum value is 0.05 billion. The mean value of export for 570 observations is 66.30 billion US Dollar with a standard deviation of 203 billion and minimum and maximum values of 0.12 and 2210 billion respectively. The remittances (REM) shows a mean value of 1.81 billion US Dollar with a minimum and maximum value of 0.001 & 26.90 billion and a standard deviation of 3.78 billion. The foreign direct investment (FDI) shows a mean value of 7.75 billion US Dollar with a minimum

and maximum value of 0.007 & 291.00 billion and a standard deviation of 27.10 billion. The external debt (EXD) has a mean value of 52.00 billion US Dollar and its standard deviation is 98.60 billion for all the countries. The maximum value of external debt (EXD) is 871.00 billion and the minimum value is 0.12 billion.

Table 4.4: Summary Statistics for Variables of High Income Countries

Variables	Mean	Std. Dev.	Minimum	Maximum	Observations
GDP	1170.000	2480.000	0.603	15800.000	627
LAB	17.537	29.515	0.0001	160.000	627
CAP	222.000	480.000	0.077	3200.000	627
HED	1.880	3.390	0.007	21.238	627
INF	5.036	10.307	-5.205	144.003	627
DCF	109.802	69.026	1.677	366.533	627
GCE	181.000	370.000	0.140	2540.000	627
EXP	235.000	337.000	0.053	2260.000	627
REM	2.300	3.300	0.000	24.400	627
FDI	24.700	58.800	0.009	734.000	627

Note: GDP = Gross domestic Product; LAB = Labor Force; CAP = Gross fixed capital Formation; HED = Higher education Development; INF = Inflation; DCF = Domestic credit provided by financial sector; GCE = General government final consumption expenditure; EXP = Export; REM = Remittances; FDI = Foreign direct investment; EXD = External Debt.

The Table 4.4 shows the properties of the variables of high income countries. The gross domestic product (GDP) has a mean value of 1170.00 billion US Dollar for all the countries in the sample and its standard deviation is 2480.00 billion. The maximum value of gross domestic product (GDP) is 15800.00 billion and the minimum value is 0.60 billion. Labor force (LAB) has a mean value of 17.54 million and the standard deviation is 29.51 million. The maximum value is 160.00 million and the minimum value is 0.001 million. The mean value of gross fixed capital formation (CAP) for 627 observations is 222 billion US Dollar with a standard deviation of 480 billion and minimum and maximum values of 0.08 and 3200 billion respectively. The higher

education (HED) enrollment shows a mean value of 1.88 million with a minimum and maximum value of 0.007 & 21.238 million and a standard deviation is 3.390 million.

The inflation (INF) ranges from a minimum of -5.20% to a maximum of 144% with a mean of 5.04% and a standard deviation of 10.31%. The domestic credit provided by financial sector (DCF) has a mean value of 109.80% and its standard deviation is 69.03% of GDP for all the countries. The maximum value of domestic credit provided by financial sector (DCF) is 366.53% and the minimum value is 1.68%. General government final consumption expenditure (GCE) has a mean value of 181.00 billion US Dollar and the standard deviation is 370.00 billion. The maximum value is 2540.00 billion and the minimum value is 0.14 billion. The mean value of export for 627 observations is 235.00 billion US Dollar with a standard deviation of 337.00 billion and minimum and maximum values of 0.05 and 2260.00 billion respectively. The remittances (REM) shows a mean value of 2.30 billion US Dollar with a minimum and maximum value of 0 & 24.40 billion and a standard deviation of 3.30 billion. The foreign direct investment (FDI) shows a mean value of 24.70 billion US Dollar with a minimum and maximum value of 0.01 & 734.00 billion and a standard deviation of 58.80 billion.

The Table 4.5 shows the properties of the variables of the aggregate sample of 96 countries all together. The gross domestic product (GDP) has a mean value of 529.00 billion US Dollar for all the countries in the sample and its standard deviation is 1600.00 billion. The maximum value of gross domestic product (GDP) of 15800.00 billion is

reported in United States of America in year of 2013 from high income category, whereas, the minimum value of 0.44 billion is reported in Vanuatu in year of 1995 from the lower middle income category. Labor force (LAB) has a mean value of 26.92 million and the standard deviation is 89.26 million. The maximum value of 802 million is reported in China in year of 2013 from the upper middle income category and the minimum value is 53.96 thousands is reported in Grenada in year of 1995 from the upper middle income category.

The mean value of gross fixed capital formation (CAP) for 1844 observations is 106.00 billion US Dollar with a standard deviation of 352.00 billion and minimum and maximum values of 0.04 and 4340.00 billion respectively. The maximum value is reported in China in year of 2013 from the upper middle income category. The minimum value is reported in Vanuatu in year of 1998 from the lower middle income category. The higher education (HED) enrollment shows a mean value of 0.999 million with a minimum and maximum value of 0.001 & 35.071 million and a standard deviation is 2.059 million.

The inflation (INF) ranges from a minimum of -8.53% to a maximum of 411.759% with a mean of 9.67% and a standard deviation of 35.85%. The maximum value is reported in Bulgaria in year of 1997 from the upper middle income category. The minimum value is reported in Azerbaijan in year of 1999 from the upper middle income category. The domestic credit provided by financial sector (DCF) has a mean value of 68.13% of GDP and its standard deviation is 58.26% for all the countries. The maximum value of

domestic credit provided by financial sector (DCF) is 366.53% and the minimum value is 0.36%. The maximum value is reported in Japan in year of 2013 from the high income category. The minimum value is reported in Botswana in year of 2004 from the upper middle income category. General government final consumption expenditure (GCE) has a mean value of 75.9 billion US Dollar and the standard deviation is 239.00 billion. The maximum value is 2540.00 billion and the minimum value is 0.04 billion. The maximum value is reported in United States in year of 2012 from the high income category. The minimum value is reported in Vanuatu in year of 2002 from the lower middle income category.

Table 4.5: Summary Statistics for Variables of Aggregate Sample of 96 Countries

Variables	Mean	Std. Dev.	Minimum	Maximum	Observations
GDP	529.000	1600.000	0.440000	15800.000	1824
LAB	26.916	89.264	0.000054	802.000	1824
CAP	106.000	352.000	0.043963	4340.000	1824
HED	0.999	2.059	0.000600	35.071	1824
INF	9.672	35.848	-8.525170	411.759	1824
DCF	68.132	58.257	0.362724	366.533	1824
GCE	75.900	239.000	0.043693	2540.000	1824
EXP	108.000	248.000	0.053236	2260.000	1824
REM	2.380	5.160	0.000114	70.000	1824
FDI	11.400	39.000	0.000130	734.000	1824
EXD	23.800	65.000	0.047880	871.000	1824

Note: GDP = Gross domestic Product; LAB = Labor Force; CAP = Gross fixed capital Formation; HED = Higher education Development; INF = Inflation; DCF = Domestic credit provided by financial sector ; GCE = General government final consumption expenditure; EXP = Export; REM = Remittances; FDI = Foreign direct investment; EXD = External Debt.

The mean value of export for 1844 observations is 108.00 billion US Dollar with a standard deviation of 248.00 billion and minimum and maximum values of 0.05 and 2260.00 billion respectively. The maximum value is reported in United States in year of 2013 from the high income category. The minimum value is reported in Seychelles in year of 1995 from the high income category. The remittances (REM) shows a mean

value of 2.38 billion US Dollar with a minimum and maximum value of 0.00011 & 70.00 billion and a standard deviation of 5.16 billion. The maximum value is reported in India in year of 2013 from the lower middle income category. The foreign direct investment (FDI) shows a mean value of 11.40 billion US Dollar with a minimum and maximum value of 0.00013 & 734.00 billion and a standard deviation of 39.00 billion. The maximum value is reported in Netherlands in year of 2007 from the high income category. The external debt (EXD) has a mean value of 23.80 billion US Dollar and its standard deviation is 65.00 billion for all the countries. The maximum value of external debt (EXD) is 871.00 billion and the minimum value is 0.0479 billion.

4.3 Low Income Countries

In this section, we present the results of empirical estimations of low income countries and further discuss these results in the theoretical and conceptual context.

4.3.1 Unit Root Analyses

Table 4.6: Results of Stationary Analyses for Low Income Countries

Variables	Im, Pesaran and Shin			
	I(0)		I(1)	
	C	C&T	C	C&T
GDP	14.427	5.399	-2.142**	-6.960*
LAB	24.773	6.436	-2.593*	-3.133*
CAP	7.828	2.791	-6.526*	-7.650*
HED	3.497	1.022	-2.796*	-2.595*
INF	11.809	3.570	-13.173*	-7.733*
DCF	6.182	1.267	-6.698*	-6.475*
GCE	7.770	1.298	-6.330*	-5.968*
FDI	4.612	-0.434	-10.108*	-6.779*
EXP	0.868	1.258	-8.701*	-7.699*
REM	4.491	-0.596	-9.061*	-6.931*
EXD	2.240	2.324	-7.577*	-6.388*

*, **, *** indicates significance level respectively at 1%, 5% and 10%.

Source: Author's estimation.

We use, Im, Pesaran and Shin (2003) unit root test to analyze the stationary properties of our considered variables. The IPS test considers the unobserved heterogeneity among the cross sections and also eliminates the issues of serial correlation. The IPS unit root test has the best properties to judge the problem of a unit root in the small sample. The desirable results for unit root test include that the variables should be non-stationary at the level and become stationary at the first difference. Table 4.6 represents the results of stationary analyses for low income countries. We first, employed these tests on the level of each variable and then applied to the first difference. In both estimation procedures of level and first difference, we also analyze the results in two dimensions, i.e. with constant and with constant and trend. Results indicate that all the variables are non-stationary at level and become stationary at first difference. These results confirm that there is no problem of unit root in our variables of low income countries and we can further use these variables for the long run estimations.

4.3.2 Cointegration Analyses

After having the confirmation from unit root test that our variables have a stationary properties of $I(1)$ which is the requirement to perform panel cointegration techniques, we applied two methods of panel cointegration i.e. Pedroni cointegration (1999) and Kao cointegration (1999) to analyze the long run relationship among foreign capital inflows, banking crisis, currency crisis and economic growth in low income countries. These tests are based on the two-step residual based cointegration tests of Engle-Granger (1987). The Pedroni cointegration based on a seven statistical value. The Pedroni cointegration is useful to control the biasness of country size and also solve the

issues of heterogeneity (Das & Choudhary, 2011). The Kao cointegration method follows the same basic approach as used in the Pedroni cointegration, but also control the issues of cross-section specific intercepts and homogenous coefficients.

Table 4.7: Results of Pedroni ((Engle-Granger based) Panel Cointegration in Low Income Countries

Estimates	Stats.	Prob.
GDP = f (LAB+CAP+HED+INF+DCF+GCE+BAC)		
Panel v-statistic	-0.583	0.720
Panel rho-statistic	1.875	0.970
Panel PP statistic	-1.700	0.045
Panel ADF statistic	-1.765	0.039
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	2.398	0.992
Group PP statistic	-2.477	0.007
Group ADF statistic	-1.577	0.057
GDP = f (LAB+CAP+HED+INF+DCF+GCE+CRG)		
Panel v-statistic	0.592	0.277
Panel rho-statistic	3.704	1.000
Panel PP statistic	-1.505	0.066
Panel ADF statistic	-3.096	0.001
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	5.043	1.000
Group PP statistic	-2.457	0.007
Group ADF statistic	-3.249	0.001
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI)		
Panel v-statistic	1.379	0.084
Panel rho-statistic	2.496	0.994
Panel PP statistic	-5.020	0.000
Panel ADF statistic	-5.032	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	4.215	1.000
Group PP statistic	-5.485	0.000
Group ADF statistic	-5.691	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP)		
Panel v-statistic	-0.741	0.771
Panel rho-statistic	3.088	0.999
Panel PP statistic	-2.723	0.003
Panel ADF statistic	-3.825	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	4.512	1.000
Group PP statistic	-4.338	0.000
Group ADF statistic	-3.607	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+REM)		
Panel v-statistic	0.660	0.255
Panel rho-statistic	3.391	1.000
Panel PP statistic	-2.544	0.006
Panel ADF statistic	-3.449	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	4.758	1.000
Group PP statistic	-3.689	0.000
Group ADF statistic	-3.526	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXD)		
Panel v-statistic	0.895	0.186
Panel rho-statistic	3.271	1.000
Panel PP statistic	-3.017	0.001
Panel ADF statistic	-3.953	0.000

Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	4.805	1.000
Group PP statistic	-2.924	0.002
Group ADF statistic	-3.649	0.000

The null hypothesis of Pedroni's (1997) panel cointegration procedure is no cointegration
Source: Author's estimation.

Table 4.8: Results of Pedroni ((Engle-Granger based) Panel Cointegration of Interaction Terms in Low Income Countries

Estimates	Stats.	Prob.	Stats.	Prob.
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI*BAC)		GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI*CRC)		
Panel v-statistic	-1.033	0.849	0.339	0.367
Panel rho-statistic	1.711	0.957	3.463	1.000
Panel PP statistic	-1.872	0.031	-3.489	0.000
Panel ADF statistic	-1.756	0.040	-3.072	0.001
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	2.242	0.988	4.612	1.000
Group PP statistic	-3.986	0.000	-4.983	0.000
Group ADF statistic	-1.818	0.035	-3.096	0.001
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP*BAC)		GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP*CRC)		
Panel v-statistic	-1.023	0.847	0.303	0.381
Panel rho-statistic	1.673	0.953	3.494	1.000
Panel PP statistic	-1.916	0.028	-3.340	0.000
Panel ADF statistic	-2.003	0.023	-3.099	0.001
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	2.198	0.986	4.657	1.000
Group PP statistic	-4.047	0.000	-4.667	0.000
Group ADF statistic	-2.506	0.006	-2.928	0.002
GDP = f (LAB+CAP+HED+INF+DCF+GCE+REM*BAC)		GDP = f (LAB+CAP+HED+INF+DCF+GCE+REM*CRC)		
Panel v-statistic	-1.020	0.846	0.298	0.383
Panel rho-statistic	1.690	0.954	3.501	1.000
Panel PP statistic	-1.822	0.034	-3.306	0.001
Panel ADF statistic	-1.910	0.028	-3.112	0.001
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	2.218	0.987	4.661	1.000
Group PP statistic	-3.982	0.000	-4.636	0.000
Group ADF statistic	-2.441	0.007	-2.947	0.002
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXD*BAC)		GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXD*CRC)		
Panel v-statistic	-1.023	0.847	0.313	0.377
Panel rho-statistic	1.674	0.953	3.484	1.000
Panel PP statistic	-1.911	0.028	-3.373	0.000
Panel ADF statistic	-1.998	0.023	-3.108	0.001
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	2.199	0.986	4.655	1.000
Group PP statistic	2.199	0.986	-4.681	0.000
Group ADF statistic	2.199	0.986	-2.920	0.002

The null hypothesis of Pedroni's (1997) panel cointegration procedure is no cointegration

Source: Author's estimation.

Results of Pedroni cointegration are reported in Table 4.7 and 4.8, while the results of Kao cointegration are reported in Table 4.9. The results of Pedroni cointegration method indicate the rejection of null hypothesis of no cointegration for the all test statistics at 10% or better level of significance except the panel v-statistics and rho-statistics. According to Pedroni (2004), Al-Irani (2006) and Pao & Tsai (2010) in small time dimensions, the panel v-statistics and rho-statistics may have a very low power. Furthermore, Guterrez (2003) concludes that group statistics (especially Augmented Dickey Fuller (ADF) and Phillips and Perron (PP) have the best power to judge the long run cointegration among the test statistics of Pedroni (1999). Therefore, we can conclude that the foreign capital inflows, banking crisis, currency crisis and economic growth are cointegrated in the long run in the sample of low income countries. Results of Kao cointegration are reported in Table 4.9.

Table 4.9: Results of Kao (Engle-Granger based) Panel Cointegration in Low Income Countries

Estimates	Stats.	Prob.
GDP = f (LAB+CAP+HED+INF+DCF+GCE+BAC)		
Panel ADF statistic	-3.326	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+CRC)		
Panel ADF statistic	-3.720	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI)		
Panel ADF statistic	-3.715	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP)		
Panel ADF statistic	-3.316	0.001
GDP = f (LAB+CAP+HED+INF+DCF+GCE+REM)		
Panel ADF statistic	-3.630	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXD)		
Panel ADF statistic	-3.983	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI*BAC)		
Panel ADF statistic	-3.314	0.001
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI*CRC)		
Panel ADF statistic	-3.734	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP*BAC)		
Panel ADF statistic	-3.390	0.000

$GDP = f(LAB+CAP+HED+INF+DCF+GCE+EXP \cdot CRC)$		
Panel ADF statistic	-3.731	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+REM \cdot BAC)$		
Panel ADF statistic	-3.223	0.001
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+REM \cdot CRC)$		
Panel ADF statistic	-3.784	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+EXD \cdot BAC)$		
Panel ADF statistic	-3.344	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+EXD \cdot CRC)$		
Panel ADF statistic	-3.723	0.000

The null hypothesis of Kao Residual Cointegration panel cointegration procedure is no cointegration
Source: Authors' estimation.

The results of the Kao cointegration method also indicate the rejection of the null hypothesis of no cointegration in the favor of valid long run cointegration for the all test statistics at the 1 % level of significance in low income countries.

4.3.3 Long Run Analysis

After having the valid evidence of significant long run cointegration among considered variables, the next step is to estimate the long run coefficients. We used fixed effect and random effect methods to analyze the long run relationship. The Hausman test is used to select the best preferable model between fixed effect and random effect models (Greene, 2000). The null hypothesis of Hausman test is that the country effects are uncorrelated with the other regressors in the model (Hausman, 1978). If the country effect is correlated (null hypothesis is rejected), a random effect model violating the basic assumption of Gauss-Markov and produces the biased estimators. If null hypothesis is rejected, a fixed effect model is then preferred. Consequently, if the null hypothesis is accepted, the estimated results of random effect model is then preferred, and one should focus on results of random effect hereafter. In this section, we discuss the long run

impact and coefficients of different independent variables on economic growth in the sample of low income countries.

Banking Crisis and Currency Crisis

The results which explain the long run impact of banking crisis and currency crisis on economic growth is presented in Table 4.10. The results of banking crisis are reported in model I whereas, the results of currency crisis are reported in model II. Results of both models indicate that the prob. value of Hausman test is insignificant (0.963) and (0.211), which confirm the acceptance of null hypothesis and concluded that the random effect model is preferred over fixed effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results also indicate the negative and significant impact of banking crisis on economic growth, whereas, the negative, but insignificant influence of currency crisis on economic growth is observed. It is concluded that the banking and currency crises decrease the progress of the economic development. Results also conclude that the banking crises is more harmful to the economic growth of low income countries as compare to currency crises.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by financial sector and government consumption expenditure have significant positive impact on economic growth whereas, inflation has significant negative impact on economic growth in low income countries.

Table 4.10: Long Run Results of Banking and Currency Crisis in Low Income Countries

Variables	I						II					
	FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	11.348	0.001		6.794	0.000		12.615	0.000		8.584	0.000	
LAB	0.490	0.018	1.243	0.918	0.000	1.029	0.428	0.038	1.239	0.696	0.000	3.828
CAP	0.073	0.008	1.826	0.053	0.081	3.906	0.068	0.013	1.809	0.060	0.025	3.459
HED	0.004	0.000	1.150	0.002	0.037	1.374	0.003	0.000	1.151	0.003	0.001	1.150
INF	-0.043	0.039	1.251	-0.038	0.068	2.895	-0.048	0.020	1.218	-0.042	0.030	2.593
DCF	0.131	0.000	1.301	0.115	0.000	3.714	0.134	0.000	1.288	0.134	0.000	2.149
GCE	0.196	0.000	1.432	0.136	0.000	3.353	0.183	0.000	1.429	0.182	0.000	3.426
BAC	-0.069	0.219	1.425	-0.105	0.063	1.374						
CRC							-0.007	0.687	1.227	-0.003	0.840	1.162
Adj. R ²	0.997			0.912			0.997			0.778		
Hausman Stats. (Prob)	1.924 (0.963)						9.628 (0.211)					
F-stats (Prob.)	1605.739 (0.000)			267.937 (0.000)			1592.524 (0.000)			96.176 (0.000)		

Source: Authors' estimation.

Foreign Direct Investment

The results which explain the long run impact of foreign direct investment and interaction terms of banking and currency crisis with foreign direct investment on economic growth is presented in Table 4.11. Model I, II and III show the results of foreign direct investment, interaction of foreign direct investment and banking crisis and interaction of foreign direct investment and currency crisis respectively. Results of all three models indicate that the prob value of Hausman test is insignificant (0.125), (0.958) and (0.345), which confirm the acceptance of null hypothesis and concluded that the random effect model is preferred over fixed effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results indicate the positive and significant impact of foreign direct investment on economic

growth. The coefficient of foreign direct investment is showing that the 1% increase in FDI causes the increase in economic growth by 0.008%. This finding is consistent with the previous empirical studies of (Vudayagiri N Balasubramanyam et al., 1999; Nair-Reichert and Weinhold, 2001; Choe, 2003; Li and Liu, 2005; Rabiei and Masoudi, 2012; Omri and Kahouli, 2014; Olayemi, 2015; Yusoff and Nuh, 2015). Results of model II and III confirm that the impact of foreign direct investment on economic growth becomes negative and insignificant in the presence of systemic banking crises and currency crises. Results further conclude that the systemic banking crisis (-0.007) comparatively more effects the influence of FDI on economic growth as compared to currency crisis (-0.004) in low income countries.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by the financial sector and government consumption expenditure have a positive impact on economic growth whereas, inflation has negative impact on economic growth in low income countries.

Table 4.11: Long Run Results of Foreign Direct Investment in Low Income Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	12.529	0.000		8.563	0.000		11.403	0.001		7.104	0.000		13.013	0.000		8.750	0.000	
LAB	0.424	0.022	1.220	0.708	0.000	4.167	0.488	0.022	1.258	0.882	0.000	3.365	0.407	0.058	1.264	0.684	0.000	3.423
CAP	0.059	0.042	1.957	0.049	0.091	3.862	0.075	0.010	1.846	0.058	0.046	4.117	0.068	0.018	1.823	0.060	0.031	3.163
HED	0.003	0.000	1.057	0.002	0.003	1.081	0.004	0.000	1.145	0.002	0.022	1.235	0.003	0.000	1.129	0.003	0.002	1.120
INF	-0.047	0.004	1.202	-0.042	0.031	2.599	-0.043	0.040	1.233	-0.039	0.062	2.707	-0.049	0.019	1.213	-0.042	0.032	2.238
DCF	0.138	0.000	1.295	0.136	0.000	2.152	0.135	0.000	1.309	0.115	0.000	2.340	0.139	0.000	1.304	0.140	0.000	1.974
GCE	0.186	0.000	1.360	0.177	0.000	3.441	0.187	0.000	1.370	0.143	0.000	4.229	0.172	0.000	1.384	0.175	0.000	2.901
FDI	0.008	0.082	1.125	0.007	0.030	1.323												
FDI * BAC							-0.005	0.152	1.389	-0.007	0.050	1.281						
FDI * CRC													-0.001	0.501	1.222	-0.004	0.673	1.140
Adj. R ²	0.997			0.779			0.997			0.917			0.997			0.739		
Hausman. Stats.	11.336 (0.125)						2.029 (0.958)						7.864 (0.345)					
F-stats (Prob.)	1602.919 (0.000)			91.946 (0.000)			1605.339 (0.000)			304.262 (0.000)			1588.806 (0.000)			73.481 (0.000)		

Source: Author's estimation.

Export of Goods and Services

The results which explain the long run impact of exports of goods and services and interaction terms of banking and currency crisis with exports of goods and services on economic growth is presented in Table 4.12. Model I, II and III show the results of exports of goods and services, interaction of exports and banking crisis and interaction of exports and currency crisis respectively. Results of all three models indicate that the prob value of Hausman test is insignificant (0.388), (0.953) and (0.187), which confirm the acceptance of null hypothesis and concluded that the random effect model is preferred over fixed effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results indicate the positive and significant impact of exports of goods and services on economic growth. The coefficient of exports of goods and services is showing that the 1% increase in exports causes the increase in economic growth by 0.266%. This finding is consistent with the previous empirical studies. Results of model II confirm that the impact of exports on economic growth becomes significantly negative in the presence of systemic banking crises. Results of model III further confirm that the impact of export of goods and service on economic growth becomes insignificant in the presence of currency crises. These findings conclude that the banking and currency crisis are harmful to the relationship of export and economic growth in low income countries.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by the financial sector and government consumption expenditure have a positive impact on economic growth whereas, inflation has negative impact on economic growth in low income countries.

Table 4.12: Long Run Results of Exports in Low Income Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	23.5512	0.0000		19.2129	0.0000		11.4166	0.0005		7.0817	0.0000		12.0720	0.0002		8.3993	0.0000	
LAB	0.3604	0.0243	1.4405	0.1090	0.3905	1.9294	0.4886	0.0177	1.2437	0.8844	0.0000	3.3677	0.4553	0.0263	1.2257	0.7177	0.0000	3.9756
CAP	0.0003	0.9886	1.9507	0.0004	0.9831	2.2345	0.0732	0.0077	1.8261	0.0573	0.0484	4.1175	0.0704	0.0104	1.8183	0.0596	0.0325	3.5173
HED	0.0027	0.0000	1.0615	0.0025	0.0001	1.0657	0.0037	0.0001	1.1490	0.0020	0.0262	1.2289	0.0033	0.0004	1.1743	0.0024	0.0044	1.1501
INF	0.0104	0.4888	1.3239	0.0155	0.2956	1.5755	-0.0436	0.0363	1.2534	-0.0392	0.0599	2.7008	-0.0471	0.0231	1.2281	-0.0416	0.0328	2.5220
DCF	0.0784	0.0000	1.4157	0.0843	0.0000	1.5358	0.1301	0.0000	1.3004	0.1142	0.0000	2.3390	0.1322	0.0000	1.2893	0.1348	0.0000	2.1532
GCE	0.1250	0.0000	1.3589	0.1500	0.0000	1.6750	0.1950	0.0000	1.4364	0.1436	0.0001	4.2217	0.1886	0.0000	1.4335	0.1734	0.0000	3.3100
EXP	0.2658	0.0000	1.6254	0.2512	0.0000	1.9306												
EXP * BAC							-0.0032	0.2458	1.4331	-0.0049	0.0770	1.2841						
EXP * CRC													0.0024	0.6933	1.2611	0.0015	0.7965	1.1704
Adj. R²	0.998			0.749			0.997			0.917			0.997			0.771		
Hausman. Stats.				7.408 (0.388)						2.106 (0.953)						10.035 (0.187)		
F-stats (Prob.)	3291.129 (0.000)			81.994 (0.000)			1619.315 (0.000)			304.453 (0.000)			1607.523 (0.000)			87.396 (0.000)		

Source: Author's estimation.

Workers' Remittances

The results which explain the long run impact of workers' remittances and interaction terms of banking and currency crisis with workers' remittances on economic growth is presented in Table 4.13. Model I, II and III show the results of workers' remittances, interaction of workers' remittances and banking crisis and interaction of workers' remittances and currency crisis respectively. Results of all three models indicate that the prob value of Hausman test is insignificant (0.697), (0.144) and (0.258), which confirm the acceptance of null hypothesis and concluded that the random effect model is preferred over fixed effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results indicate the negative, but insignificant impact of workers' remittances on economic growth. This finding is consistent with the previous empirical studies. Results of model II confirm that the impact of workers' remittances on economic growth becomes significantly negative in the presence of systemic banking crises. Results of model III further confirm that the impact of workers' remittances on economic growth becomes insignificant in the presence of currency crises. These findings conclude that the banking and currency crisis are harmful to the relationship of workers' remittances and economic growth in low income countries.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by the financial sector and government consumption expenditure have a positive impact on economic growth whereas, inflation has negative impact on economic growth in low income countries.

Table 4.13: Long Run Results of Remittances in Low Income Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	14.839	0.000		9.756	0.000		11.341	0.001		7.270	0.000		12.757	0.000		8.678	0.000	
LAB	0.328	0.132	1.306	0.605	0.000	2.173	0.493	0.021	1.257	0.857	0.000	3.657	0.421	0.042	1.241	0.688	0.000	3.657
CAP	0.076	0.009	1.819	0.069	0.013	2.417	0.075	0.009	1.843	0.057	0.037	3.353	0.068	0.014	1.809	0.060	0.025	3.353
HED	0.003	0.000	1.063	0.003	0.001	1.069	0.004	0.000	1.147	0.003	0.003	1.133	0.004	0.000	1.133	0.003	0.001	1.133
INF	-0.050	0.016	1.207	-0.041	0.034	1.641	-0.043	0.040	1.228	-0.040	0.043	2.499	-0.048	0.019	1.217	-0.042	0.030	2.499
DCF	0.129	0.000	1.374	0.140	0.000	1.586	0.134	0.000	1.311	0.113	0.000	2.086	0.134	0.000	1.286	0.135	0.000	2.086
GCE	0.164	0.000	1.453	0.183	0.000	1.970	0.187	0.000	1.360	0.159	0.000	3.281	0.182	0.000	1.425	0.183	0.000	3.281
REM	0.016	0.097	1.290	0.008	0.040	1.067												
REM * BAC							-0.006	0.110	1.366	-0.008	0.025	1.134						
REM * CRC													-0.001	0.563	1.208	-0.004	0.696	1.134
Adj. R ²	0.997			0.624			0.997			0.769			0.997			0.769		
Hausman. Stats.	4.694 (0.697)						10.886 (0.144)						8.929 (0.258)					
F-stats (Prob.)	1612.776 (0.000)			43.181 (0.000)			1610.589 (0.000)			91.489 (0.000)			1594.212 (0.000)			91.489 (0.000)		

Source: Author's estimation.

External Debt

The results which explain the long run impact of external debt and interaction terms of banking and currency crisis with external debt on economic growth is presented in Table 4.14. Model I, II and III show the results of external debt, interaction of external debt and banking crisis and interaction of external debt and currency crisis respectively. Results of all three models indicate that the prob value of Hausman test is insignificant (0.999), (0.999) and (0.349), which confirm the acceptance of null hypothesis and concluded that the random effect model is preferred over fixed effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results indicate the positive and significant impact of external debt on economic growth. This finding is consistent with the previous empirical studies. The coefficient of external debt is showing that the 1% increase in external debt causes the increase in economic growth by 0.076%. Results of model II confirm that the impact of external debt on economic growth becomes significantly negative in the presence of systemic banking crises. Results of model III further confirm that the impact of external debt on economic growth becomes insignificant in the presence of currency crises. These findings conclude that the banking and currency crisis are harmful for the relationship of external debt and economic growth in low income countries.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by the financial sector and government consumption expenditure have a positive impact on economic growth whereas, inflation has negative impact on economic growth in low income countries.

Table 4.14: Long Run Results of External Debt in Low Income Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	9.5333	0.0036		6.1616	0.0008		11.3273	0.0006		6.7999	0.0001		13.0565	0.0001		8.7801	0.0000	
LAB	0.5353	0.0080	1.2301	0.7888	0.0000	2.4475	0.4917	0.0172	1.2427	0.9179	0.0000	3.1311	0.4040	0.0602	1.2675	0.6813	0.0000	3.4042
CAP	0.0581	0.0308	1.8331	0.0469	0.0728	3.3156	0.0734	0.0077	1.8254	0.0529	0.0795	3.7474	0.0681	0.0180	1.8229	0.0601	0.0307	3.1515
HED	0.0027	0.0026	1.1493	0.0019	0.0193	1.1532	0.0037	0.0001	1.1513	0.0019	0.0356	1.2060	0.0034	0.0002	1.1394	0.0027	0.0017	1.1290
INF	-0.0559	0.0062	1.2357	-0.0483	0.0116	2.0891	-0.0430	0.0392	1.2503	-0.0384	0.0682	2.4073	-0.0488	0.0192	1.2106	-0.0418	0.0316	2.2272
DCF	0.1303	0.0000	1.2878	0.1247	0.0000	1.8834	0.1306	0.0000	1.3008	0.1145	0.0000	2.1381	0.1389	0.0000	1.3028	0.1399	0.0000	1.9648
GCE	0.1886	0.0000	1.3755	0.1825	0.0000	3.4053	0.1960	0.0000	1.4298	0.1357	0.0002	3.6057	0.1721	0.0000	1.3806	0.1747	0.0000	2.8842
EXD	0.0756	0.0042	1.1690	0.0715	0.0029	1.1284												
EXD * BAC							-0.0032	0.2055	1.4208	-0.0048	0.0573	1.2732						
EXD * CRC													-0.0006	0.4790	1.2275	-0.0004	0.6428	1.1531
Adj. R ²	0.997			0.829			0.997			0.912			0.997			0.737		
Hausman. Stats.	0.000 (0.999)						0.000 (0.999)						7.817 (0.349)					
F-stats (Prob.)	1672.997 (0.000)			132.869 (0.000)			1606.659 (0.000)			268.108 (0.000)			1589.314 (0.000)			73.014 (0.000)		

Source: Author's estimation.

4.4 Lower Middle Income Countries

In this section, we present the results of empirical estimations of lower middle income countries and further discuss these results in the theoretical and conceptual context.

4.4.1 Unit Root Analyses

Table 4.15: Results of Stationary Analyses for Lower Middle Income Countries

Variables	Im, Pesaran and Shin			
	I(0)		I(1)	
	C	C&T	C	C&T
GDP	16.021	0.622	-4.389*	-5.865*
LAB	13.660	1.126	-4.944*	-5.661*
CAP	11.510	2.324	-5.915*	-9.505*
HED	2.347	3.634	-7.344*	-4.558*
INF	-0.213	-0.500	-25.372*	-21.841*
DCF	1.370	-0.291	-11.744*	-9.593*
GCE	12.965	4.197	-3.556*	-7.303*
FDI	0.512	-0.947	-18.140*	-14.114*
EXP	-0.798	-0.604	-14.949*	-11.831*
REM	8.708	2.164	-10.903*	-10.021*
EXD	10.475	4.945	-6.408*	-7.320*

*, **, *** indicates significance level respectively at 1%, 5% and 10%.

Source: Author's estimation.

We use, Im, Pesaran and Shin unit root test to analyze the stationary properties of our considered variables. The IPS test considers the unobserved heterogeneity among the cross sections and also eliminates the issues of serial correlation. The IPS unit root test has the best properties to judge the problem of a unit root in the small sample. The desirable results for unit root test include that the variables should be non-stationary at the level and become stationary at the first difference. Table 4.15 represents the results of stationary analyses for lower middle income countries. We first, employed these tests on the level of each variable and then applied to the first difference. In both estimation

procedures of level and first difference, we also analyze the results in two dimensions, i.e. with constant and with constant and trend. Results indicate that all the variables are non-stationary at level and become stationary at first difference. These results confirm that there is no problem of unit root in our variables of lower middle income countries and we can further use these variables for the long run estimations.

4.4.2 Cointegration Analyses

After having the confirmation from unit root test that our variables have a stationary properties of $I(1)$ which is the requirement to perform panel cointegration techniques, we applied two methods of panel cointegration i.e. Pedroni cointegration (1999) and Kao cointegration (1999) to analyze the long run relationship among foreign capital inflows, banking crisis, currency crisis and economic growth in lower middle income countries. These tests are based on the two-step residual based cointegration tests of Engle-Granger (1987). The Pedroni cointegration based on a seven statistical value. The Pedroni cointegration is useful to control the biasness of country size and also solve the issues of heterogeneity (Das & Choudhary, 2011). The Kao cointegration method follows the same basic approached as used in the Pedroni cointegration, but also control the issues of cross-section specific intercepts and homogenous coefficients.

Table 4.16: Results of Pedroni ((Engle-Granger based) Panel Cointegration in Lower Middle Income Countries

Estimates	Stats.	Prob.
GDP = f (LAB+CAP+HED+INF+DCF+GCE+BAC)		
Panel v-statistic	3.455	0.000
Panel rho-statistic	5.565	1.000
Panel PP statistic	-2.838	0.002
Panel ADF statistic	-3.425	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	7.089	1.000
Group PP statistic	-6.512	0.000
Group ADF statistic	-4.350	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+CRC)		
Panel v-statistic	3.302	0.001
Panel rho-statistic	5.252	1.000
Panel PP statistic	-0.423	0.336
Panel ADF statistic	-1.650	0.050
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	7.012	1.000
Group PP statistic	-1.674	0.047
Group ADF statistic	-2.100	0.018
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI)		
Panel v-statistic	-0.057	0.523
Panel rho-statistic	5.758	1.000
Panel PP statistic	-1.338	0.091
Panel ADF statistic	-2.651	0.004
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	7.289	1.000
Group PP statistic	-4.528	0.000
Group ADF statistic	-5.198	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP)		
Panel v-statistic	2.200	0.014
Panel rho-statistic	5.829	1.000
Panel PP statistic	-1.958	0.025
Panel ADF statistic	-3.524	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	7.719	1.000
Group PP statistic	-3.017	0.001
Group ADF statistic	-3.515	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+REM)		
Panel v-statistic	2.420	0.008
Panel rho-statistic	5.796	1.000
Panel PP statistic	-2.239	0.013
Panel ADF statistic	-2.580	0.005
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	7.001	1.000
Group PP statistic	-6.144	0.000
Group ADF statistic	-4.364	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXD)		
Panel v-statistic	2.382	0.009
Panel rho-statistic	5.491	1.000
Panel PP statistic	-2.410	0.008
Panel ADF statistic	-3.340	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	7.239	1.000
Group PP statistic	-6.449	0.000
Group ADF statistic	-4.068	0.000

The null hypothesis of Pedroni's (1997) panel cointegration procedure is no cointegration

Source: Author's estimation.

Table 4.17: Results of Pedroni ((Engle-Granger based) Panel Cointegration of Interaction Terms in Lower Middle Income Countries

Estimates	Stats.	Prob.	Stats.	Prob.
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI*BAC)		GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI*CRC)		
Panel v-statistic	3.806	0.000	-0.078	0.531
Panel rho-statistic	6.442	1.000	5.497	1.000
Panel PP statistic	-2.940	0.002	-0.198	0.422
Panel ADF statistic	-2.604	0.005	-1.658	0.049
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	8.143	1.000	7.013	1.000
Group PP statistic	-12.761	0.000	-1.725	0.042
Group ADF statistic	-3.164	0.001	-2.303	0.011
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP*BAC)		GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP*CRC)		
Panel v-statistic	0.309	0.379	-0.118	0.547
Panel rho-statistic	7.251	1.000	5.491	1.000
Panel PP statistic	-4.686	0.000	-0.182	0.428
Panel ADF statistic	-2.248	0.012	-1.443	0.075
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	9.266	1.000	7.016	1.000
Group PP statistic	-17.286	0.000	-1.677	0.047
Group ADF statistic	-2.096	0.018	-2.084	0.019
GDP = f (LAB+CAP+HED+INF+DCF+GCE+REM*BAC)		GDP = f (LAB+CAP+HED+INF+DCF+GCE+REM*CRC)		
Panel v-statistic	2.698	0.004	-1.066	0.857
Panel rho-statistic	7.620	1.000	5.869	1.000
Panel PP statistic	-1.894	0.029	-0.749	0.227
Panel ADF statistic	-1.707	0.044	-3.215	0.001
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	9.333	1.000	7.774	1.000
Group PP statistic	-15.476	0.000	-3.704	0.000
Group ADF statistic	-2.768	0.003	-3.744	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXD*BAC)		GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXD*CRC)		
Panel v-statistic	2.605	0.005	-0.680	0.752
Panel rho-statistic	6.695	1.000	5.516	1.000
Panel PP statistic	-5.312	0.000	-2.841	0.002
Panel ADF statistic	-4.018	0.000	-3.726	0.000
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	8.808	1.000	7.213	1.000
Group PP statistic	-11.985	0.000	-8.843	0.000
Group ADF statistic	-3.261	0.001	-4.476	0.000

The null hypothesis of Pedroni's (1997) panel cointegration procedure is no cointegration

Source: Author's estimation.

Results of Pedroni cointegration are reported in Table 4.16 and 4.17, while the results of Kao cointegration are reported in Table 4.18. The results of Pedroni cointegration method indicate the rejection of null hypothesis of no cointegration for the all test statistics at 10% or better level of significance except the panel v-statistics and rho-statistics. According to Pedroni (2004), Al-Irani (2006) and Pao & Tsai (2010) in small

time dimensions, the panel v-statistics and rho-statistics may have a very low power. Furthermore, Guterrez (2003) concludes that group statistics (especially Augmented Dickey Fuller (ADF) and Phillips and Perron (PP) have the best power to judge the long run cointegration among the test statistics of Pedroni (1999). Therefore, we can conclude that the foreign capital inflows, banking crisis, currency crisis and economic growth are cointegrated in the long run in the sample of lower middle income countries.

Results of Kao cointegration are reported in Table 4.18. The results of the Kao cointegration method also indicate the rejection of the null hypothesis of no cointegration in the favor of valid long run cointegration for the all test statistics at the 1 % level of significance in low income countries.

Table 4.18: Results of Kao (Engle-Granger based) Panel Cointegration in Lower Middle Income Countries

Estimates	Stats.	Prob.
GDP = f (LAB+CAP+HED+INF+DCF+GCE+BAC)		
Panel ADF statistic	-6.512	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+CRC)		
Panel ADF statistic	-5.959	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI)		
Panel ADF statistic	-6.243	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP)		
Panel ADF statistic	-5.915	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+REM)		
Panel ADF statistic	-5.556	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXD)		
Panel ADF statistic	-6.165	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI*BAC)		
Panel ADF statistic	-6.579	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI*CRC)		
Panel ADF statistic	-5.966	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP*BAC)		
Panel ADF statistic	-6.505	0.000

$GDP = f(LAB+CAP+HED+INF+DCF+GCE+EXP \cdot CRC)$		
Panel ADF statistic	-5.975	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+REM \cdot BAC)$		
Panel ADF statistic	-6.679	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+REM \cdot CRC)$		
Panel ADF statistic	-5.901	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+EXD \cdot BAC)$		
Panel ADF statistic	-6.564	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+EXD \cdot CRC)$		
Panel ADF statistic	-5.958	0.000

The null hypothesis of Kao Residual Cointegration panel cointegration procedure is no cointegration
Source: Authors' estimation.

4.4.3 Long Run Analysis

After having the valid evidence of significant long run cointegration among considered variables, the next step is to estimate the long run coefficients. We used fixed effect and random effect methods to analyze the long run relationship. The Hausman test is used to select the best preferable model between fixed effect and random effect models (Greene, 2000). The null hypothesis of Hausman test is that the country effects are uncorrelated with the other regressors in the model (Hausman, 1978). If the country effect is correlated (null hypothesis is rejected), a random effect model violating the basic assumption of Gauss-Markov and produces the biased estimators. If null hypothesis is rejected, a fixed effect model is then preferred. Consequently, if the null hypothesis is accepted, the estimated results of random effect model is then preferred, and one should focus on results of random effect hereafter. In this section, we discuss the long run impact and coefficients of different independent variables on economic growth in the sample of lower middle income countries.

Banking Crisis and Currency Crisis

The results which explain the long run impact of banking crisis and currency crisis on economic growth is presented in Table 4.19. The results of banking crisis are reported in model I whereas, the results of currency crisis are reported in model II. Results of both models indicate that the prob value of Hausman test is significant (0.001) and (0.001), which confirm the rejection of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results also indicate the negative and significant impact of the banking crisis on economic growth, whereas, the positive and significant influence of currency crisis on economic growth is observed. It is concluded that the banking crises decrease the progress of the economic development, whereas, currency crisis helps to promote economic growth in lower middle income countries.

Table 4.19: Long Run Results of Banking and Currency Crisis in Lower Middle Income Countries

Variables	I						II					
	FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	21.352	0.000		20.129	0.000		21.537	0.000		20.306	0.000	
LAB	0.025	0.592	1.342	0.008	0.859	1.349	0.019	0.677	1.343	0.029	0.515	1.344
CAP	0.147	0.000	2.301	0.149	0.000	2.411	0.150	0.000	2.275	0.155	0.000	2.412
HED	0.073	0.000	1.241	0.083	0.000	1.314	0.075	0.000	1.239	0.078	0.000	1.286
INF	0.000	0.027	1.087	0.000	0.019	1.087	0.000	0.107	1.151	0.000	0.148	1.149
DCF	0.053	0.000	1.298	0.063	0.000	1.294	0.040	0.000	1.238	0.047	0.000	1.253
GCE	0.039	0.023	2.199	0.053	0.002	2.377	0.041	0.017	2.232	0.047	0.006	2.386
BAC	-0.037	0.002	1.079	-0.044	0.000	1.072						
CRC							-0.025	0.004	1.097	-0.025	0.003	1.097
Adj. R ²	0.998			0.587			0.998			0.568		
Hausman Stats. (Prob)	24.453 (0.001)						24.468 (0.001)					
F-stats (Prob.)	26118.05 (0.000)			91.891 (0.000)			25910.36 (0.000)			80.496 (0.000)		

Source: Author's estimation.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by financial sector, inflation and government consumption expenditure have significant positive impact on economic growth.

Foreign Direct Investment

The results which explain the long run impact of foreign direct investment and interaction terms of banking and currency crisis with foreign direct investment on economic growth is presented in Table 4.20. Model I, II and III show the results of foreign direct investment, interaction of foreign direct investment and banking crisis and interaction of foreign direct investment and currency crisis respectively. Results of all three models indicate that the prob value of Hausman test is significant (0.001), (0.001) and (0.001), which confirm the acceptance of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Results indicate the positive and significant impact of foreign direct investment on economic growth. The coefficient of foreign direct investment is showing that the 1% increase in FDI causes the increase in economic growth by 0.007%. This finding is consistent with the previous empirical studies. Results of model II confirm that the impact of foreign direct investment on economic growth becomes negative and significant in the presence of systemic banking crises. Results of model III confirm that the impact of foreign direct investment on economic growth remains positive and significant in the presence of currency crises. However, the magnitude of the relationship is dragged down from 0.007 to 0.001.

Table 4.20: Long Run Results of Foreign Direct Investment in Lower Middle Income Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	21.7809	0.0000		20.5152	0.0000		21.4654	0.0000		20.1062	0.0000		21.5211	0.0000		20.2531	0.0000	
LAB	0.0440	0.3364	1.3547	0.0193	0.6706	1.3408	0.0296	0.5210	1.3376	0.0081	0.8520	1.3493	0.0323	0.4748	1.3543	0.0167	0.7032	1.3555
CAP	0.1523	0.0000	2.1716	0.1546	0.0000	2.4682	0.1470	0.0000	2.3006	0.1494	0.0000	2.4052	0.1494	0.0000	2.2183	0.1530	0.0000	2.3652
HED	0.0767	0.0000	1.2776	0.0774	0.0000	1.2855	0.0742	0.0000	1.2389	0.0823	0.0000	1.3140	0.0795	0.0000	1.2603	0.0823	0.0000	1.3088
INF	0.0004	0.0114	1.1022	0.0004	0.0213	1.1065	0.0004	0.0212	1.0882	0.0004	0.0192	1.0874	0.0003	0.0472	1.1379	0.0003	0.0685	1.1365
DCF	0.0406	0.0003	1.2707	0.0485	0.0000	1.2563	0.0520	0.0000	1.3099	0.0632	0.0000	1.2972	0.0434	0.0000	1.2179	0.0510	0.0000	1.2336
GCE	0.0419	0.0174	2.1449	0.0386	0.0231	2.3526	0.0383	0.0240	2.2020	0.0531	0.0015	2.3754	0.0460	0.0073	2.2116	0.0531	0.0017	2.3781
FDI	0.0071	0.0591	1.0703	0.0040	0.2678	1.2049												
FDI * BAC							-0.0020	0.0010	1.0862	-0.0023	0.0002	1.0737						
FDI * CRC													0.0010	0.0182	1.0772	0.0010	0.0146	1.0766
Adj. R ²	0.998			0.560			0.998			0.588			0.998			0.577		
Hausman. Stats.	24.557 (0.001)						24.460 (0.001)						24.899 (0.001)					
F-stats (Prob.)	22380.02 (0.000)			78.041 (0.000)			26067.41 (0.000)			92.243 (0.000)			25306.33 (0.000)			87.963 (0.000)		

Source: Author's estimation.

These findings conclude that the banking and currency crisis are harmful for the relationship of foreign direct investment and economic growth in lower middle income countries.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by financial sector, inflation and government consumption expenditure have significant positive impact on economic growth.

Export of Goods and Services

The results which explain the long run impact of exports of goods and services and interaction terms of banking and currency crisis with exports of goods and services on economic growth is presented in Table 4.21. Model I, II and III show the results of exports of goods and services, interaction of exports and banking crisis and interaction of exports and currency crisis respectively. Results of all three models indicate that the prob value of Hausman test is significant (0.002), (0.001) and (0.001), which confirm the acceptance of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results indicate the positive and significant impact of exports of goods and services on economic growth. The coefficient of exports of goods and services is showing that the 1% increase in exports causes the increase in economic growth by 0.104%. This finding is consistent with the previous empirical studies.

Table 4.21: Long Run Results of Exports in Lower Middle Income Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	21.6626	0.0000		20.6503	0.0000		21.4891	0.0000		20.1320	0.0000		21.5536	0.0000		20.3247	0.0000	
LAB	0.0848	0.0525	1.3780	0.0377	0.3962	1.4085	0.0300	0.5151	1.3377	0.0076	0.8610	1.3494	0.0193	0.6762	1.3430	0.0292	0.5168	1.3440
CAP	0.1150	0.0000	2.5784	0.1165	0.0000	2.9393	0.1473	0.0000	2.2993	0.1496	0.0000	2.4032	0.1504	0.0000	2.2752	0.1546	0.0000	2.4119
HED	0.0803	0.0000	1.2602	0.0827	0.0000	1.2995	0.0745	0.0000	1.2389	0.0826	0.0000	1.3138	0.0744	0.0000	1.2389	0.0778	0.0000	1.2851
INF	0.0005	0.0044	1.0893	0.0004	0.0116	1.0887	0.0004	0.0219	1.0884	0.0004	0.0200	1.0875	0.0003	0.1047	1.1494	0.0002	0.1440	1.1479
DCF	0.0288	0.0056	1.2870	0.0340	0.0011	1.3211	0.0515	0.0000	1.3038	0.0627	0.0000	1.2919	0.0395	0.0002	1.2380	0.0465	0.0000	1.2529
GCE	0.0249	0.1294	2.2315	0.0254	0.1195	2.4341	0.0379	0.0254	2.2004	0.0527	0.0017	2.3733	0.0404	0.0183	2.2260	0.0463	0.0064	2.3786
EXP	0.1044	0.0000	1.8277	0.1060	0.0000	2.0647												
EXP * BAC							-0.0017	0.0013	1.0805	-0.0019	0.0003	1.0690						
EXP * CRC													0.0011	0.0038	1.0909	0.0011	0.0033	1.0908
Adj. R ²	0.998			0.609			0.998			0.587			0.998			0.567		
Hausman. Stats.	23.289 (0.002)						24.478 (0.001)						24.492 (0.001)					
F-stats (Prob.)	27598.17 (0.000)			95.359 (0.000)			26037.31 (0.000)			91.998 (0.000)			25908.49 (0.000)			80.406 (0.000)		

Source: Author's estimation.

Results of model II confirm that the impact of exports on economic growth becomes significantly negative in the presence of systemic banking crises. Results of model III confirm that the impact of export on economic growth remains positive and significant in the presence of currency crises. However, the magnitude of the relationship is dragged down from 0.104 to 0.001. These findings conclude that the banking and currency crisis are harmful for the relationship of export and economic growth in lower middle income countries.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by financial sector, inflation and government consumption expenditure have significant positive impact on economic growth.

Workers' Remittances

The results which explain the long run impact of workers' remittances and interaction terms of banking and currency crisis with workers' remittances on economic growth is presented in Table 4.22. Model I, II and III show the results of workers' remittances, interaction of workers' remittances and banking crisis and interaction of workers' remittances and currency crisis respectively. Results of all three models indicate that the prob value of Hausman test is significant (0.002), (0.002) and (0.001), which confirm the acceptance of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent

variables of estimated models. Results indicate the positive and significant impact of workers' remittances on economic growth. This finding is consistent with the previous empirical studies. The coefficient of workers' remittances is showing that the 1% increase in remittances causes the increase in economic growth by 0.013%. Results of model II confirm that the impact of workers' remittances on economic growth becomes significantly negative in the presence of systemic banking crises. Results of model III confirm that the impact of remittances on economic growth remains positive and significant in the presence of currency crises. However, the magnitude of the relationship is dragged down from 0.013 to 0.001. These findings conclude that the banking and currency crisis are harmful for the relationship of workers' remittances and economic growth in lower middle income countries.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by financial sector, inflation and government consumption expenditure have significant positive impact on economic growth.

Table 4.22: Long Run Results of Remittances in Lower Middle Income Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	21.160	0.000		19.681	0.000		21.571	0.000		20.184	0.000		21.698	0.000		20.377	0.000	
LAB	0.018	0.697	1.383	0.040	0.376	1.366	0.054	0.239	1.290	0.002	0.956	1.291	0.044	0.343	1.303	0.007	0.880	1.302
CAP	0.145	0.000	2.233	0.148	0.000	2.420	0.142	0.000	2.253	0.144	0.000	2.434	0.143	0.000	2.243	0.147	0.000	2.399
HED	0.071	0.000	1.254	0.073	0.000	1.316	0.078	0.000	1.233	0.081	0.000	1.287	0.077	0.000	1.232	0.079	0.000	1.280
INF	0.001	0.001	1.225	0.001	0.000	1.215	0.001	0.002	1.206	0.001	0.001	1.198	0.001	0.015	1.254	0.001	0.010	1.248
DCF	0.044	0.000	1.189	0.052	0.000	1.206	0.051	0.000	1.259	0.060	0.000	1.269	0.042	0.000	1.200	0.049	0.000	1.214
GCE	0.047	0.010	2.488	0.055	0.002	2.714	0.058	0.001	2.481	0.068	0.000	2.675	0.055	0.002	2.470	0.064	0.000	2.644
REM	0.013	0.005	1.205	0.015	0.001	1.218												
REM * BAC							-0.002	0.006	1.080	-0.002	0.001	1.072						
REM * CRC													0.001	0.043	1.088	0.001	0.040	1.088
Adj. R²	0.998			0.594			0.998			0.590			0.998			0.579		
Hausman. Stats.				22.458 (0.002)						23.124 (0.002)						23.792 (0.001)		
F-stats (Prob.)	26606.51 (0.000)			89.592 (0.000)			26579.69 (0.000)			88.244 (0.000)			26346.76 (0.000)			84.147 (0.000)		

Source: Author's estimation.

External Debt

The results which explain the long run impact of external debt and interaction terms of banking and currency crisis with external debt on economic growth is presented in Table 4.23. Model I, II and III show the results of external debt, interaction of external debt and banking crisis and interaction of external debt and currency crisis respectively. Results of all three models indicate that the prob value of Hausman test is significant (0.000), (0.001) and (0.001), which confirm the acceptance of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results indicate the negative and significant impact of external debt on economic growth. This finding is consistent with the previous empirical studies. The coefficient of external debt is showing that the 1% increase in external debt causes the decrease in economic growth by -0.047%. Results of model II confirm that the impact of external debt on economic growth becomes significantly positive in the presence of systemic banking crises. Results of model III confirm that the impact of external debt on economic growth remain negative and significant in the presence of currency crises. However, the magnitude of the relationship is dragged down from 0.047 to 0.004. These findings conclude that the relationship of external debt and economic growth is getting stronger in the period of banking and currency crisis in lower middle income countries.

Table 4.23: Long Run Results of External Debt in Lower Middle Income Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	23.6010	0.0000		22.2560	0.0000		21.5747	0.0000		20.2969	0.0000		21.6284	0.0000		20.4041	0.0000	
LAB	0.1554	0.0034	1.8063	0.0947	0.0643	1.7635	0.0270	0.5623	1.3377	0.0229	0.6128	1.3393	0.0204	0.6606	1.3426	0.0279	0.5372	1.3442
CAP	0.1398	0.0000	2.3511	0.1452	0.0000	2.4318	0.1509	0.0000	2.2813	0.1549	0.0000	2.4283	0.1505	0.0000	2.2758	0.1548	0.0000	2.4083
HED	0.0802	0.0000	1.2480	0.0819	0.0000	1.2807	0.0748	0.0000	1.2398	0.0784	0.0000	1.2885	0.0730	0.0000	1.2398	0.0763	0.0000	1.2847
INF	0.0003	0.0415	1.0940	0.0003	0.0512	1.0936	0.0004	0.0161	1.0899	0.0004	0.0235	1.0891	0.0003	0.0655	1.1239	0.0003	0.0894	1.1227
DCF	0.0556	0.0000	1.3075	0.0601	0.0000	1.3240	0.0470	0.0000	1.2871	0.0548	0.0000	1.2996	0.0400	0.0002	1.2364	0.0470	0.0000	1.2501
GCE	0.0238	0.1555	2.2256	0.0301	0.0703	2.3169	0.0342	0.0453	2.1892	0.0402	0.0174	2.3489	0.0374	0.0283	2.2015	0.0431	0.0107	2.3494
EXD	0.0468	0.0000	1.6390	-0.0406	0.0000	1.5931												
EXD * BAC							0.0034	0.0835	1.0537	0.0040	0.0404	1.0516						
EXD * CRC													-0.0044	0.0084	1.0522	-0.0043	0.0094	1.0520
Adj. R ²	0.998			0.564			0.998			0.565			0.998			0.565		
Hausman. Stats.	26.817 (0.000)						24.387 (0.001)						24.606 (0.001)					
F-stats (Prob.)	26821.77 (0.000)			79.154 (0.000)			25552.47 (0.000)			79.606 (0.000)			25813.81 (0.000)			79.445 (0.000)		

Source: Author's estimation.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by financial sector, inflation and government consumption expenditure have significant positive impact on economic growth.

4.5 Upper Middle Income Countries

In this section, we present the results of empirical estimations of upper middle income countries and further discuss these results in the theoretical and conceptual context.

4.5.1 Unit Root Analyses

Table 4.24: Results of Stationary Analyses for Upper Middle Income Countries

Variables	Im, Pesaran and Shin			
	I(0)		I(1)	
	C	C&T	C	C&T
GDP	12.463	1.768	-9.398*	-9.388*
LAB	6.433	0.625	-7.995*	-9.033*
CAP	8.515	1.874	-8.744*	-9.471*
HED	-0.354	0.244	-12.67*	-12.824*
INF	1.818	-0.158	-13.967*	-11.510*
DCF	13.079	2.143	-8.907*	-8.307*
GCE	6.479	-0.028	-10.229*	-11.096*
FDI	-0.973	-0.954	-20.082*	-14.999*
EXP	1.985	-0.371	-16.009*	-12.485*
REM	3.783	-0.358	-11.945*	-8.847*
EXD	14.125	6.810	-6.086*	-9.831*

*, **, *** indicates significance level respectively at 1%, 5% and 10%.

Source: Author's estimation.

We use, Im, Pesaran and Shin unit root test to analyze the stationary properties of our considered variables. The IPS test considers the unobserved heterogeneity among the cross sections and also eliminates the issues of serial correlation. The IPS unit root test

has the best properties to judge the problem of a unit root in the small sample. The desirable results for the unit root test include that the variables should be non-stationary at the level and become stationary at the first difference. Table 4.24 represents the results of stationary analyses for upper middle income countries. We first, employed these tests on level of each variables and then applied on the first difference. In both estimation procedures of level and first difference, we also analyze the results in two dimensions, i.e. with constant and with constant and trend. Results indicate that all the variables are non-stationary at level and become stationary at first difference. These results confirm that there is no problem of unit root in our variables of upper middle income countries and we can further use these variables for the long run estimations.

4.5.2 Cointegration Analyses

After having the confirmation from unit root test that our variables have a stationary properties of $I(1)$ which is the requirement to perform panel cointegration techniques, we applied two methods of panel cointegration i.e. Pedroni cointegration (1999) and Kao cointegration (1999) to analyze the long run relationship among foreign capital inflows, banking crisis, currency crisis and economic growth in upper middle income countries. These tests are based on the two-step residual based cointegration tests of Engle-Granger (1987). The Pedroni cointegration based on a seven statistic values. The Pedroni cointegration is useful to control the biasness of country size and also solve the issues of heterogeneity (Das & Choudhary, 2011). The Kao cointegration method follows the same basic approached as used in the Pedroni cointegration, but also control the issues of cross-section specific intercepts and homogenous coefficients.

Table 4.25: Results of Pedroni ((Engle-Granger based) Panel Cointegration in Upper Middle Income Countries

Estimates	Stats.	Prob.
GDP = f (LAB+CAP+HED+INF+DCF+GCE+BAC)		
Panel v-statistic	0.894	0.186
Panel rho-statistic	5.860	1.000
Panel PP statistic	-0.116	0.454
Panel ADF statistic	-1.291	0.098
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	7.529	1.000
Group PP statistic	-8.764	0.000
Group ADF statistic	-3.917	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+CRC)		
Panel v-statistic	-0.101	0.540
Panel rho-statistic	5.909	1.000
Panel PP statistic	-1.869	0.031
Panel ADF statistic	-2.643	0.004
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	7.431	1.000
Group PP statistic	-9.451	0.000
Group ADF statistic	-5.200	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI)		
Panel v-statistic	-2.209	0.986
Panel rho-statistic	6.443	1.000
Panel PP statistic	-7.796	0.000
Panel ADF statistic	-4.379	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	8.679	1.000
Group PP statistic	-14.144	0.000
Group ADF statistic	-7.030	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP)		
Panel v-statistic	-3.890	1.000
Panel rho-statistic	7.020	1.000
Panel PP statistic	-5.794	0.000
Panel ADF statistic	-3.403	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	8.548	1.000
Group PP statistic	-14.773	0.000
Group ADF statistic	-4.525	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+REM)		
Panel v-statistic	2.726	0.003
Panel rho-statistic	5.845	1.000
Panel PP statistic	-8.245	0.000
Panel ADF statistic	-7.441	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	8.278	1.000
Group PP statistic	-18.709	0.000
Group ADF statistic	-8.761	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXD)		
Panel v-statistic	-1.952	0.975
Panel rho-statistic	5.945	1.000
Panel PP statistic	-8.819	0.000
Panel ADF statistic	-3.930	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	8.278	1.000
Group PP statistic	-18.021	0.000
Group ADF statistic	-6.721	0.000

The null hypothesis of Pedroni's (1997) panel cointegration procedure is no cointegration

Source: Author's estimation.

Table 4.26: Results of Pedroni ((Engle-Granger based) Panel Cointegration of Interaction Terms in Upper Middle Income Countries

Estimates	Stats.	Prob.	Stats.	Prob.
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI*BAC)		GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI*CRC)		
Panel v-statistic	-4.812	1.000	0.115	0.454
Panel rho-statistic	2.927	0.998	5.856	1.000
Panel PP statistic	-2.863	0.002	-1.805	0.036
Panel ADF statistic	-4.227	0.000	-2.228	0.013
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	5.587	1.000	7.422	1.000
Group PP statistic	-0.819	0.206	-9.315	0.000
Group ADF statistic	-3.183	0.001	-4.227	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP*BAC)		GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP*CRC)		
Panel v-statistic	-4.822	1.000	-5.003	1.000
Panel rho-statistic	2.962	0.999	3.320	1.000
Panel PP statistic	-2.774	0.003	-2.075	0.019
Panel ADF statistic	-4.290	0.000	-2.714	0.003
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	7.525	1.000	5.374	1.000
Group PP statistic	-8.794	0.000	-3.862	0.000
Group ADF statistic	-3.915	0.000	-3.294	0.001
GDP = f (LAB+CAP+HED+INF+DCF+GCE+REM*BAC)		GDP = f (LAB+CAP+HED+INF+DCF+GCE+REM*CRC)		
Panel v-statistic	-4.824	1.000	-0.097	0.539
Panel rho-statistic	2.941	0.998	5.908	1.000
Panel PP statistic	-2.770	0.003	-1.835	0.033
Panel ADF statistic	-4.262	0.000	-2.262	0.012
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	5.577	1.000	7.427	1.000
Group PP statistic	-0.704	0.241	-9.434	0.000
Group ADF statistic	-3.283	0.001	-4.301	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXD*BAC)		GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXD*CRC)		
Panel v-statistic	-4.824	1.000	-0.088	0.535
Panel rho-statistic	2.967	0.999	5.902	1.000
Panel PP statistic	-2.750	0.003	-1.886	0.030
Panel ADF statistic	-4.274	0.000	-2.655	0.004
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	5.627	1.000	7.423	1.000
Group PP statistic	-0.747	0.227	-9.458	0.000
Group ADF statistic	-3.249	0.001	-5.183	0.000

The null hypothesis of Pedroni's (1997) panel cointegration procedure is no cointegration

Source: Author's estimation.

Results of Pedroni cointegration are reported in Table 4.25 and 4.26, while the results of Kao cointegration are reported in Table 4.27. The results of Pedroni cointegration method indicate the rejection of null hypothesis of no cointegration for the all test statistics at 10% or better level of significance except the panel v-statistics and rho-statistics. According to Pedroni (2004), Al-Irani (2006) and Pao & Tsai (2010) in small

time dimensions, the panel v-statistics and rho-statistics may have a very low power. Furthermore, Guterrez (2003) concludes that group statistics (especially Augmented Dickey Fuller (ADF) and Phillips and Perron (PP) have the best power to judge the long run cointegration among the test statistics of Pedroni (1999). Therefore, we can conclude that the foreign capital inflows, banking crisis, currency crisis and economic growth are cointegrated in the long run in the sample of upper middle income countries.

Results of Kao cointegration are reported in Table 4.27. The results of the Kao cointegration method also indicate the rejection of the null hypothesis of no cointegration in the favor of valid long run cointegration for the all test statistics at the 1 % level of significance in low income countries.

Table 4.27: Results of Kao (Engle-Granger based) Panel Cointegration in Upper Middle Income Countries

Estimates	Stats.	Prob.
GDP = f (LAB+CAP+HED+INF+DCF+GCE+BAC)		
Panel ADF statistic	-5.910	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+CRC)		
Panel ADF statistic	-6.358	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI)		
Panel ADF statistic	-5.703	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP)		
Panel ADF statistic	-4.329	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+REM)		
Panel ADF statistic	-5.815	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXD)		
Panel ADF statistic	-5.673	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI*BAC)		
Panel ADF statistic	-5.706	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI*CRC)		
Panel ADF statistic	-6.434	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP*BAC)		
Panel ADF statistic	-5.717	0.000

$GDP = f(LAB+CAP+HED+INF+DCF+GCE+EXP \cdot CRC)$		
Panel ADF statistic	-6.473	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+REM \cdot BAC)$		
Panel ADF statistic	-5.729	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+REM \cdot CRC)$		
Panel ADF statistic	-6.453	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+EXD \cdot BAC)$		
Panel ADF statistic	-5.733	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+EXD \cdot CRC)$		
Panel ADF statistic	-6.496	0.000

The null hypothesis of Kao Residual Cointegration panel cointegration procedure is no cointegration
Source: Authors' estimation.

4.5.3 Long Run Analysis

After having the valid evidence of significant long run cointegration among considered variables, the next step is to estimate the long run coefficients. We used fixed effect and random effect methods to analyze the long run relationship. The Hausman test is used to select the best preferable model between fixed effect and random effect models (Greene, 2000). The null hypothesis of Hausman test is that the country effects are uncorrelated with the other regressors in the model (Hausman, 1978). If the country effect is correlated (null hypothesis is rejected), a random effect model violating the basic assumption of Gauss-Markov and produces the biased estimators. If null hypothesis is rejected, a fixed effect model is then preferred. Consequently, if the null hypothesis is accepted, the estimated results of random effect model is then preferred, and one should focus on results of random effect hereafter. In this section, we discuss the long run impact and coefficients of different independent variables on economic growth in the sample of low income countries.

Banking Crisis and Currency Crisis

The results which explain the long run impact of banking crisis and currency crisis on economic growth is presented in Table 4.28. The results of banking crisis are reported in model I whereas, the results of currency crisis are reported in model II. Results of both models indicate that the prob value of Hausman test is significant (0.011) and (0.006), which confirm the rejection of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results also indicate the negative and significant impact of banking crisis and currency crisis on economic growth. It is concluded that the banking and currency crises decrease the progress of the economic development in upper middle income countries.

Table 4.28: Long Run Results of Banking and Currency Crisis in Upper Middle Income Countries

Variables	I						II					
	FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	11.5796	0.0000		10.2818	0.0000		11.7071	0.0000		10.3128	0.0000	
LAB	0.3638	0.0000	1.1724	0.4253	0.0000	1.1290	0.3384	0.0000	1.1536	0.4136	0.0000	1.1316
CAP	0.1287	0.0000	2.3819	0.1345	0.0000	3.3757	0.1372	0.0000	2.4118	0.1372	0.0000	3.4013
HED	0.0056	0.7442	1.0620	0.0178	0.2738	1.2290	-0.0004	0.9825	1.0388	0.0120	0.4523	1.1871
INF	0.0001	0.2041	1.1767	0.0001	0.3514	1.1714	0.0001	0.0703	1.1161	0.0001	0.1786	1.1104
DCF	0.0658	0.0000	1.1750	0.0701	0.0000	1.2684	0.0651	0.0000	1.1917	0.0695	0.0000	1.2675
GCE	0.1984	0.0000	2.4210	0.2008	0.0000	3.8127	0.2032	0.0000	2.4867	0.2067	0.0000	3.8446
BAC	-0.0399	0.0045	1.1072	0.0370	0.0078	1.1308						
CRC							-0.0408	0.0001	1.0648	0.0353	0.0007	1.0849
Adj. R ²	0.998			0.708			0.998			0.712		
Hausman Stats. (Prob)	18.277 (0.011)						19.752 (0.006)					
F-stats (Prob.)	14139.62 (0.000)			194.771 (0.000)			14445.14 (0.000)			198.041 (0.000)		

Source: Author's estimation.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by financial sector, inflation and government consumption expenditure have significant positive impact on economic growth in upper middle income countries.

Foreign Direct Investment

The results which explain the long run impact of foreign direct investment and interaction terms of banking and currency crisis with foreign direct investment on economic growth is presented in Table 4.29. Model I, II and III show the results of foreign direct investment, interaction of foreign direct investment and banking crisis and interaction of foreign direct investment and currency crisis respectively. Results of all three models indicate that the prob value of Hausman test is significant (0.008), (0.010) and (0.006), which confirm the acceptance of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results indicate the positive and significant impact of foreign direct investment on economic growth. The coefficient of foreign direct investment is showing that the 1% increase in FDI causes the increase in economic growth by 0.011%. This finding is consistent with the previous empirical studies. Results of model II and III confirm that the impact of FDI on economic growth remains positive and significant in the presence of banking and currency crises. However, the magnitude of the relationship is dragged down from 0.011 to 0.002. These findings conclude that the banking and currency crisis are harmful for the relationship of FDI and economic growth in upper middle income countries.

Table 4.29: Long Run Results of Foreign Direct Investment in Upper Middle Income Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	11.3392	0.0000		10.1961	0.0000		11.5777	0.0000		10.2813	0.0000		11.4731	0.0000		10.2834	0.0000	
LAB	0.3738	0.0000	1.1832	0.4310	0.0000	1.1622	0.3638	0.0000	1.1724	0.4253	0.0000	1.1304	0.3578	0.0000	1.1732	0.4162	0.0000	1.1324
CAP	0.1183	0.0000	2.5241	0.1214	0.0000	3.9695	0.1285	0.0000	2.3819	0.1343	0.0000	3.3897	0.1311	0.0000	2.3896	0.1364	0.0000	3.4158
HED	0.0001	0.0402	1.1105	0.0001	0.1087	1.1040	0.0001	0.1565	1.1621	0.0001	0.2847	1.1564	0.0001	0.0828	1.1165	0.0001	0.1784	1.1103
INF	-0.0050	0.7652	1.0351	0.0076	0.6360	1.2555	0.0045	0.7939	1.0601	0.0168	0.3024	1.2291	-0.0006	0.9701	1.0319	0.0117	0.4631	1.1901
DCF	0.0700	0.0000	1.1580	0.0740	0.0000	1.2805	0.0664	0.0000	1.1724	0.0706	0.0000	1.2670	0.0658	0.0000	1.1683	0.0700	0.0000	1.2657
GCE	0.2000	0.0000	2.4199	0.1994	0.0000	4.2562	0.1982	0.0000	2.4215	0.2006	0.0000	3.8328	0.2061	0.0000	2.4336	0.2065	0.0000	3.8740
FDI	0.0112	0.0498	1.1772	0.0132	0.0181	1.3697												
FDI * BAC							0.0017	0.0109	1.0898	0.0015	0.0179	1.1114						
FDI * CRC													0.0018	0.0005	1.0587	0.0016	0.0010	1.0726
Adj. R ²	0.998			0.736			0.998			0.709			0.998			0.713		
Hausman. Stats.	19.087 (0.008)						18.398 (0.010)						19.924 (0.006)					
F-stats (Prob.)	14023.77 (0.000)			223.947 (0.000)			14095.98 (0.000)			195.370 (0.000)			1425.32 (0.000)			199.709 (0.000)		

Source: Author's estimation.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by the financial sector and government consumption expenditure have a positive impact on economic growth whereas, inflation has negative impact on economic growth in upper middle income countries.

Export of Goods and Services

The results which explain the long run impact of exports of goods and services and interaction terms of banking and currency crisis with exports of goods and services on economic growth is presented in Table 4.30. Model I, II and III show the results of exports of goods and services, interaction of exports and banking crisis and interaction of exports and currency crisis respectively. Results of all three models indicate that the prob value of Hausman test is significant (0.003), (0.011) and (0.006), which confirm the acceptance of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results indicate the positive and significant impact of exports of goods and services on economic growth. The coefficient of exports of goods and services is showing that the 1% increase in exports causes the increase in economic growth by 0.192%. This finding is consistent with the previous empirical studies. Results of model II and III confirm that the impact of export on economic growth remains positive and significant in the presence of banking and currency crises. However, the magnitude of the relationship is dropped down from 0.192 to 0.002. These findings conclude that the banking and currency crisis are harmful for the relationship of exports and economic growth in upper middle income countries.

Table 4.30: Long Run Results of Exports in Upper Middle Income Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	10.9335	0.0000		10.0649	0.0000		11.5874	0.0000		10.2867	0.0000		11.5019	0.0000		10.3042	0.0000	
LAB	0.3962	0.0000	1.1759	0.4411	0.0000	1.1767	0.3633	0.0000	1.1724	0.4250	0.0000	1.1296	0.3558	0.0000	1.1739	0.4146	0.0000	1.1319
CAP	0.0585	0.0006	2.6887	0.0599	0.0003	4.3459	0.1284	0.0000	2.3813	0.1342	0.0000	3.3826	0.1312	0.0000	2.3895	0.1365	0.0000	3.4031
HED	0.0001	0.1964	1.1167	0.0000	0.4442	1.1086	0.0001	0.1701	1.1668	0.0001	0.3037	1.1613	0.0001	0.0807	1.1157	0.0001	0.1737	1.1096
INF	-0.0399	0.0092	1.0748	-0.0285	0.0509	1.3319	0.0047	0.7812	1.0603	0.0171	0.2950	1.2284	-0.0006	0.9702	1.0318	0.0117	0.4646	1.1878
DCF	0.0514	0.0000	1.1977	0.0545	0.0000	1.3389	0.0662	0.0000	1.1740	0.0704	0.0000	1.2681	0.0654	0.0000	1.1717	0.0695	0.0000	1.2680
GCE	0.1091	0.0000	2.7237	0.1076	0.0000	4.0084	0.1985	0.0000	2.4209	0.2009	0.0000	3.8240	0.2067	0.0000	2.4356	0.2071	0.0000	3.8596
EXP	0.1919	0.0000	2.3106	0.1936	0.0000	3.8323												
EXP * BAC							0.0015	0.0084	1.0955	0.0014	0.0142	1.1176						
EXP * CRC													0.0016	0.0004	1.0633	0.0015	0.0008	1.0779
Adj. R ²	0.998			0.797			0.998			0.708			0.998			0.712		
Hausman. Stats.	21.957 (0.003)						18.288 (0.011)						19.889 (0.006)					
F-stats (Prob.)	17790.88 (0.000)			314.839 (0.000)			14108.30 (0.000)			195.019 (0.000)			14268.14 (0.000)			198.702 (0.000)		

Source: Author's estimation.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by the financial sector and government consumption expenditure have a positive impact on economic growth whereas, inflation has negative impact on economic growth in upper middle income countries.

Workers' Remittances

The results which explain the long run impact of workers' remittances and interaction terms of banking and currency crisis with workers' remittances on economic growth is presented in Table 4.31. Model I, II and III show the results of workers' remittances, interaction of workers' remittances and banking crisis and interaction of workers' remittances and currency crisis respectively. Results of all three models indicate that the prob value of Hausman test is significant (0.002), (0.011) and (0.006), which confirm the acceptance of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results indicate the positive and significant impact of workers' remittances on economic growth. This finding is consistent with the previous empirical studies. The coefficient of remittances is showing that the 1% increase in REM causes the increase in economic growth by 0.033%. Results of model II and III confirm that the impact of workers' remittances on economic growth remains positive and significant in the presence of banking and currency crises. However, the magnitude of the relationship is dropped down from 0.033 to 0.002. These findings conclude that the banking and currency crisis are harmful for the relationship of remittances and economic growth in upper middle income countries.

Table 4.31: Long Run Results of Remittances in Upper Middle Income Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	11.5983	0.0000		10.3149	0.0000		11.5460	0.0000		10.2536	0.0000		11.4739	0.0000		10.2756	0.0000	
LAB	0.3625	0.0000	1.1726	0.4249	0.0000	1.1426	0.3659	0.0000	1.1727	0.4272	0.0000	1.1315	0.3588	0.0000	1.1729	0.4174	0.0000	1.1324
CAP	0.1257	0.0000	2.4019	0.1310	0.0000	3.5439	0.1288	0.0000	2.3825	0.1347	0.0000	3.3911	0.1311	0.0000	2.3900	0.1364	0.0000	3.4218
HED	-0.0003	0.9846	1.0706	0.0139	0.3953	1.2592	0.0051	0.7634	1.0605	0.0176	0.2806	1.2293	-0.0003	0.9861	1.0325	0.0121	0.4487	1.1918
INF	0.0001	0.0420	1.1138	0.0001	0.1024	1.1083	0.0001	0.1645	1.1594	0.0001	0.2997	1.1533	0.0001	0.0766	1.1150	0.0001	0.1677	1.1087
DCF	0.0682	0.0000	1.1755	0.0720	0.0000	1.2834	0.0662	0.0000	1.1713	0.0704	0.0000	1.2662	0.0657	0.0000	1.1700	0.0698	0.0000	1.2681
GCE	0.1971	0.0000	2.4767	0.1977	0.0000	4.0939	0.1980	0.0000	2.4218	0.2003	0.0000	3.8337	0.2056	0.0000	2.4317	0.2061	0.0000	3.8792
REM	0.0327	0.0456	1.2395	0.0045	0.2974	1.2621												
REM * BAC							0.0019	0.0057	1.0869	0.0018	0.0091	1.1097						
REM * CRC													0.0018	0.0007	1.0549	0.0017	0.0012	1.0699
Adj. R ²	0.998			0.719			0.998			0.709			0.998			0.714		
Hausman. Stats.	22.458 (0.002)						18.223 (0.011)						19.702 (0.006)					
F-stats (Prob.)	13934.32 (0.000)			205.726 (0.000)			14127.37 (0.000)			196.011 (0.000)			14237.40 (0.000)			199.984 (0.000)		

Source: Author's estimation.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by financial sector, inflation and government consumption expenditure have a positive impact on economic growth in upper middle income countries.

External Debt

The results which explain the long run impact of external debt and interaction terms of banking and currency crisis with external debt on economic growth is presented in Table 4.32. Model I, II and III show the results of external debt, interaction of external debt and banking crisis and interaction of external debt and currency crisis respectively. Results of all three models indicate that the prob value of Hausman test is significant (0.000), (0.011) and (0.006), which confirm the acceptance of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results indicate the positive and significant impact of external debt on economic growth. This finding is consistent with the previous empirical studies. The coefficient of external debt is showing that the 1% increase in external debt causes the increase in economic growth by 0.042%. Results of model II and III confirm that the impact of external debt on economic growth remain positive and significant in the presence of banking and currency crises. However, the magnitude of the relationship is dropped down from 0.042 to 0.002. These findings conclude that the banking and currency crisis are harmful for the relationship of external debt and economic growth in upper middle income countries.

Table 4.32: Long Run Results of External Debt in Upper Middle Income Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	10.1856	0.0000		9.7203	0.0000		11.5844	0.0000		10.2835	0.0000		11.4834	0.0000		10.2946	0.0000	
LAB	0.4373	0.0000	1.3083	0.4680	0.0000	1.2578	0.3637	0.0000	1.1724	0.4253	0.0000	1.1291	0.3566	0.0000	1.1735	0.4150	0.0000	1.1313
CAP	0.1163	0.0000	2.4365	0.1194	0.0000	4.3160	0.1285	0.0000	2.3815	0.1344	0.0000	3.3766	0.1314	0.0000	2.3895	0.1366	0.0000	3.4012
HED	0.0001	0.0527	1.1101	0.0001	0.1651	1.1014	0.0001	0.1780	1.1656	0.0001	0.3152	1.1601	0.0001	0.0839	1.1161	0.0001	0.1793	1.1100
INF	-0.0006	0.9699	1.0316	0.0111	0.4800	1.3358	0.0051	0.7646	1.0599	0.0174	0.2848	1.2265	-0.0004	0.9809	1.0320	0.0118	0.4574	1.1877
DCF	0.0514	0.0000	1.4799	0.0542	0.0000	1.7111	0.0660	0.0000	1.1739	0.0702	0.0000	1.2673	0.0652	0.0000	1.1717	0.0694	0.0000	1.2679
GCE	0.2025	0.0000	2.4219	0.1918	0.0000	3.9504	0.1984	0.0000	2.4211	0.2008	0.0000	3.8149	0.2070	0.0000	2.4355	0.2073	0.0000	3.8564
EXD	0.0419	0.0001	1.6883	0.0429	0.0000	2.0045												
EXD * BAC							0.0016	0.0054	1.0940	0.0015	0.0092	1.1159						
EXD * CRC													0.0017	0.0002	1.0630	0.0016	0.0004	1.0777
Adj. R ²	0.998			0.775			0.998			0.708			0.998			0.713		
Hausman. Stats.	26.817 (0.000)						18.281 (0.011)						20.001 (0.006)					
F-stats (Prob.)	14326.16 (0.000)			276.752 (0.000)			14130.54 (0.000)			194.773 (0.000)			14296.35 (0.000)			199.025 (0.000)		

Source: Author's estimation.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by the financial sector and government consumption expenditure have a positive impact on economic growth whereas, inflation has negative impact on economic growth in upper middle income countries.

4.6 High Income Countries

In this section, we present the results of empirical estimations of high income countries and further discuss these results in the theoretical and conceptual context.

4.6.1 Unit Root Analyses

Table 4.33: Results of Stationary Analyses for High Income Countries

Variables	Im, Pesaran and Shin			
	I(0)		I(1)	
	C	C&T	C	C&T
GDP	4.245	-1.061	-8.032*	-6.617*
LAB	4.302	1.146	-6.715*	-5.109*
CAP	2.934	-0.344	-9.654*	-6.678*
HED	4.005	-0.841	-6.300*	-4.0345*
INF	-0.057	-0.114	-14.989*	-11.523*
DCF	2.719	1.483	-6.091*	-2.657*
GEX	5.791	-0.009	-5.994*	-2.603*
FDI	-0.443	-0.484	-14.238*	-10.722*
EXP	0.435	-0.414	-10.650*	-7.539*
REM	3.084	-0.319	-9.696*	-7.302*

*, **, *** indicates significance level respectively at 1%, 5% and 10%.

Source: Author's estimation.

We use, Im, Pesaran and Shin unit root test to analyze the stationary properties of our considered variables. The IPS test considers the unobserved heterogeneity among the cross sections and also eliminates the issues of serial correlation. The IPS unit root test has the best properties to judge the problem of a unit root in the small sample. The

desirable results for the unit root test include that the variables should be non-stationary at the level and become stationary at the first difference. Table 4.33 represents the results of stationary analyses for high income countries. We first, employed these tests on the level of each variable and then applied to the first difference. In both estimation procedures of level and first difference, we also analyze the results in two dimensions, i.e. with constant and with constant and trend. Results indicate that all the variables are non-stationary at level and become stationary at first difference. These results confirm that there is no problem of unit root in our variables of high income countries and we can further use these variables for the long run estimations.

4.6.2 Cointegration Analyses

After having the confirmation from unit root test that our variables have a stationary properties of $I(1)$ which is the requirement to perform panel cointegration techniques, we applied two methods of panel cointegration i.e. Pedroni cointegration (1999) and Kao cointegration (1999) to analyze the long run relationship among foreign capital inflows, banking crisis, currency crisis and economic growth in high income countries. These tests are based on the two-step residual based cointegration tests of Engle-Granger (1987). The Pedroni cointegration based on a seven statistical value. The Pedroni cointegration is useful to control the biasness of country size and also solve the issues of heterogeneity (Das & Choudhary, 2011). The Kao cointegration method follows the same basic approach as used in the Pedroni cointegration, but also control the issues of cross-section specific intercepts and homogenous coefficients.

Table 4.34: Results of Pedroni ((Engle-Granger based) Panel Cointegration in High Income Countries

Estimates	Stats.	Prob.
GDP = f (LAB+CAP+HED+INF+DCF+GCE+BAC)		
Panel v-statistic	5.547	0.000
Panel rho-statistic	6.383	1.000
Panel PP statistic	-2.426	0.008
Panel ADF statistic	-3.333	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	8.012	1.000
Group PP statistic	-6.498	0.000
Group ADF statistic	-4.393	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+CRC)		
Panel v-statistic	8.252	0.000
Panel rho-statistic	6.729	1.000
Panel PP statistic	-0.492	0.311
Panel ADF statistic	-1.932	0.027
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	9.144	1.000
Group PP statistic	-1.565	0.059
Group ADF statistic	-2.075	0.019
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI)		
Panel v-statistic	9.411	0.000
Panel rho-statistic	5.913	1.000
Panel PP statistic	-2.890	0.002
Panel ADF statistic	-3.234	0.001
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	8.406	1.000
Group PP statistic	-3.970	0.000
Group ADF statistic	-3.302	0.001
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP)		
Panel v-statistic	6.099	0.000
Panel rho-statistic	6.115	1.000
Panel PP statistic	-2.717	0.003
Panel ADF statistic	-3.677	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	8.649	1.000
Group PP statistic	-9.688	0.000
Group ADF statistic	-5.356	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+REM)		
Panel v-statistic	8.658	0.000
Panel rho-statistic	6.187	1.000
Panel PP statistic	-4.028	0.000
Panel ADF statistic	-4.681	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	8.457	1.000
Group PP statistic	-8.080	0.000
Group ADF statistic	-6.175	0.000

The null hypothesis of Pedroni's (1997) panel cointegration procedure is no cointegration

Source: Author's estimation.

Table 4.35: Results of Pedroni ((Engle-Granger based) Panel Cointegration of Interaction Terms in High Income Countries

Estimates	Stats.	Prob.	Stats.	Prob.
$GDP = f$ (LAB+CAP+HED+INF+DCF+GCE+FDI*BAC)		$GDP = f$ (LAB+CAP+HED+INF+DCF+GCE+FDI*CRC)		
Panel v-statistic	5.570	0.000	8.281	0.000
Panel rho-statistic	6.390	1.000	6.756	1.000
Panel PP statistic	-2.414	0.008	-0.501	0.308
Panel ADF statistic	-3.357	0.000	-1.911	0.028
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	8.042	1.000	9.181	1.000
Group PP statistic	-6.407	0.000	-1.652	0.049
Group ADF statistic	-4.353	0.000	-2.025	0.021
$GDP = f$ (LAB+CAP+HED+INF+DCF+GCE+EXP*BAC)		$GDP = f$ (LAB+CAP+HED+INF+DCF+GCE+EXP*CRC)		
Panel v-statistic	5.570	0.000	8.256	0.000
Panel rho-statistic	6.383	1.000	6.760	1.000
Panel PP statistic	-2.422	0.008	-0.490	0.312
Panel ADF statistic	-3.347	0.000	-1.918	0.028
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	8.015	1.000	9.169	1.000
Group PP statistic	-6.482	0.000	-1.622	0.052
Group ADF statistic	-4.391	0.000	-2.062	0.020
$GDP = f$ (LAB+CAP+HED+INF+DCF+GCE+REM*BAC)		$GDP = f$ (LAB+CAP+HED+INF+DCF+GCE+REM*CRC)		
Panel v-statistic	5.558	0.000	8.252	0.000
Panel rho-statistic	6.378	1.000	6.752	1.000
Panel PP statistic	-2.406	0.008	-0.452	0.326
Panel ADF statistic	-3.300	0.001	-1.878	0.030
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	8.015	1.000	9.157	1.000
Group PP statistic	-6.429	0.000	-1.636	0.051
Group ADF statistic	-4.355	0.000	-2.031	0.021

The null hypothesis of Pedroni's (1997) panel cointegration procedure is no cointegration

Source: Author's estimation.

Results of Pedroni cointegration are reported in Table 4.34 and 4.35, while the results of Kao cointegration are reported in Table 4.36. The results of Pedroni cointegration method indicate the rejection of null hypothesis of no cointegration for the all test statistics at 10% or better level of significance except the panel v-statistics and rho-statistics. According to Pedroni (2004), Al-Irani (2006) and Pao & Tsai (2010) in small time dimensions, the panel v-statistics and rho-statistics may have a very low power. Furthermore, Guterrez (2003) concludes that group statistics (especially Augmented Dickey Fuller (ADF) and Phillips and Perron (PP) have the best power to judge the long

run cointegration among the test statistics of Pedroni (1999). Therefore, we can conclude that the foreign capital inflows, banking crisis, currency crisis and economic growth are cointegrated in the long run in the sample of high income countries.

Results of Kao cointegration are reported in Table 4.36. The results of the Kao cointegration method also indicate the rejection of the null hypothesis of no cointegration in the favor of valid long run cointegration for the all test statistics at the 1 % level of significance in low income countries.

Table 4.36: Results of Kao (Engle-Granger based) Panel Cointegration in High Income Countries

Estimates	Stats.	Prob.
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+BAC)$		
Panel ADF statistic	-4.622	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+CRC)$		
Panel ADF statistic	-5.630	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+FDI)$		
Panel ADF statistic	-3.915	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+EXP)$		
Panel ADF statistic	-5.682	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+REM)$		
Panel ADF statistic	-7.330	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+FDI*BAC)$		
Panel ADF statistic	-4.456	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+FDI*CRC)$		
Panel ADF statistic	-5.873	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+EXP*BAC)$		
Panel ADF statistic	-4.490	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+EXP*CRC)$		
Panel ADF statistic	-5.848	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+REM*BAC)$		
Panel ADF statistic	-4.463	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+REM*CRC)$		
Panel ADF statistic	-5.856	0.000

The null hypothesis of Kao Residual Cointegration panel cointegration procedure is no cointegration

Source: Authors' estimation.

4.6.3 Long Run Analysis

After having the valid evidence of significant long run cointegration among considered variables, the next step is to estimate the long run coefficients. We used fixed effect and random effect methods to analyze the long run relationship. The Hausman test is used to select the best preferable model between fixed effect and random effect models (Greene, 2000). The null hypothesis of Hausman test is that the country effects are uncorrelated with the other regressors in the model (Hausman, 1978). If the country effect is correlated (null hypothesis is rejected), a random effect model violating the basic assumption of Gauss-Markov and produces the biased estimators. If null hypothesis, is rejected, a fixed effect model is then preferred. Consequently, if the null hypothesis is accepted, the estimated results of random effect model is then preferred, and one should focus on results of random effect hereafter. In this section, we discuss the long run impact and coefficients of different independent variables on economic growth in the sample of high income countries.

Banking Crisis and Currency Crisis

The results which explain the long run impact of banking crisis and currency crisis on economic growth is presented in Table 4.37. The results of banking crisis are reported in model I whereas, the results of currency crisis are reported in model II. Results of both models indicate that the prob value of Hausman test is significant (0.001) and (0.001), which confirm the rejection of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results also indicate the negative and

significant impact of banking crisis and currency crisis on economic growth. It is concluded that the banking and currency crises decrease the progress of the economic development in high income countries.

Table 4.37: Long Run Results of Banking and Currency Crisis in High Income Countries

Variables	I						II					
	FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	17.842	0.000		17.023	0.000		18.165	0.000		17.304	0.000	
LAB	0.286	0.000	1.078	0.317	0.000	1.101	0.256	0.000	1.073	0.290	0.000	1.096
CAP	0.199	0.000	2.682	0.196	0.000	2.792	0.202	0.000	2.662	0.200	0.000	2.773
HED	0.099	0.000	1.143	0.108	0.000	1.168	0.107	0.000	1.122	0.116	0.000	1.149
INF	0.001	0.019	1.227	0.001	0.009	1.215	0.001	0.044	1.261	0.001	0.023	1.248
DCF	0.007	0.230	1.073	0.009	0.100	1.085	0.004	0.522	1.035	0.006	0.277	1.045
GCE	-0.022	0.230	2.961	-0.011	0.532	3.098	-0.018	0.342	2.970	-0.007	0.689	3.116
BAC	-0.024	0.000	1.120	-0.024	0.000	1.116						
CRC							-0.013	0.028	1.060	-0.012	0.037	1.059
Adj. R²	0.998			0.565			0.998			0.560		
Hausman Stats. (Prob)				24.905 (0.001)						24.609 (0.001)		
F-stats (Prob.)	25678.03 (0.000)			114.854 (0.000)			25333.26 (0.000)			112.648 (0.000)		

Source: Author's estimation.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by the financial sector and inflation have a positive impact on economic growth whereas, government consumption expenditure has negative impact on economic growth in high income countries.

Foreign Direct Investment

The results which explain the long run impact of foreign direct investment and interaction terms of banking and currency crisis with foreign direct investment on economic growth is presented in Table 4.38. Model I, II and III show the results of foreign

direct investment, interaction of foreign direct investment and banking crisis and interaction of foreign direct investment and currency crisis respectively. Results of all three models indicate that the prob value of Hausman test is significant (0.001), (0.001) and (0.001), which confirm the acceptance of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results indicate the positive and significant impact of foreign direct investment on economic growth. The coefficient of foreign direct investment is showing that the 1% increase in FDI causes the increase in economic growth by 0.007%. This finding is consistent with the previous empirical studies. Results of model II confirm that the impact of foreign direct investment on economic growth becomes negative and significant in the presence of systemic banking crises. Results of model III confirm that the impact of foreign direct investment on economic growth remains positive and significant in the presence of currency crises. However, the magnitude of the relationship is dragged down from 0.007 to 0.001. These findings conclude that the banking and currency crisis are harmful for the relationship of foreign direct investment and economic growth in high income countries.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by the financial sector and inflation have a positive impact on economic growth whereas, government consumption expenditure has negative impact on economic growth in high income countries.

Table 4.38: Long Run Results of Foreign Direct Investment in High Income Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	17.975	0.000		17.107	0.000		17.853	0.000		17.037	0.000		18.158	0.000		17.298	0.000	
LAB	0.269	0.000	1.063	0.302	0.000	1.089	0.286	0.000	1.077	0.316	0.000	1.099	0.257	0.000	1.071	0.291	0.000	1.093
CAP	0.199	0.000	2.692	0.196	0.000	2.816	0.199	0.000	2.681	0.196	0.000	2.789	0.202	0.000	2.662	0.200	0.000	2.772
HED	0.111	0.000	1.128	0.120	0.000	1.157	0.099	0.000	1.144	0.108	0.000	1.168	0.107	0.000	1.122	0.115	0.000	1.149
INF	0.001	0.019	1.227	0.001	0.009	1.215	0.001	0.020	1.227	0.001	0.010	1.216	0.001	0.044	1.260	0.001	0.023	1.247
DCF	0.004	0.523	1.033	0.006	0.262	1.045	0.007	0.244	1.066	0.009	0.109	1.078	0.004	0.520	1.034	0.006	0.276	1.045
GCE	-0.022	0.232	2.964	-0.011	0.531	3.123	-0.022	0.235	2.960	-0.011	0.540	3.096	-0.018	0.333	2.967	-0.008	0.677	3.112
FDI	0.007	0.011	1.055	0.007	0.005	1.060												
FDI * BAC							-0.001	0.000	1.107	-0.001	0.000	1.102						
FDI * CRC													0.001	0.024	1.053	0.001	0.032	1.052
Adj. R²	0.998			0.565			0.998			0.565			0.998			0.560		
Hausman Stats.				24.023 (0.001)						24.912 (0.001)						24.618 (0.001)		
F-stats (Prob.)	25404.72 (0.000)			114.986 (0.000)			25717.30 (0.000)			114.961 (0.000)			25344.95 (0.000)			112.683 (0.000)		

Source: Author's estimation.

Export of Goods and Services

The results which explain the long run impact of exports of goods and services and interaction terms of banking and currency crisis with exports of goods and services on economic growth is presented in Table 4.39. Model I, II and III show the results of exports of goods and services, interaction of exports and banking crisis and interaction of exports and currency crisis respectively. Results of all three models indicate that the prob value of Hausman test is significant (0.001), (0.001) and (0.001), which confirm the acceptance of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results indicate the positive and significant impact of exports of goods and services on economic growth. The coefficient of exports of goods and services is showing that the 1% increase in exports causes the increase in economic growth by 0.130%. This finding is consistent with the previous empirical studies. Results of model II confirm that the impact of export on economic growth becomes negative and significant in the presence of systemic banking crises. Results of model III confirm that the impact of export on economic growth remains positive and significant in the presence of currency crises. However, the magnitude of the relationship is dragged down from 0.130 to 0.001. These findings conclude that the banking and currency crisis are harmful for the relationship of export of goods and services and economic growth in high income countries.

Table 4.39: Long Run Results of Exports in High Income Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	15.1700	0.0000		14.5388	0.0000		17.8409	0.0000		17.0256	0.0000		18.1636	0.0000		17.3028	0.0000	
LAB	0.3402	0.0000	1.0945	0.3654	0.0000	1.1571	0.2866	0.0000	1.0772	0.3171	0.0000	1.0997	0.2565	0.0000	1.0718	0.2905	0.0000	1.0940
CAP	0.1961	0.0000	2.6659	0.1945	0.0000	3.0632	0.1988	0.0000	2.6784	0.1965	0.0000	2.7870	0.2023	0.0000	2.6607	0.2001	0.0000	2.7713
HED	0.0782	0.0000	1.1632	0.0865	0.0000	1.3120	0.0994	0.0000	1.1407	0.1080	0.0000	1.1657	0.1065	0.0000	1.1229	0.1152	0.0000	1.1492
INF	0.0002	0.4331	1.2688	0.0002	0.5991	1.2613	0.0007	0.0197	1.2272	0.0008	0.0095	1.2156	0.0006	0.0436	1.2611	0.0007	0.0225	1.2481
DCF	0.0152	0.0057	1.0893	0.0186	0.0005	1.1026	0.0069	0.2329	1.0675	0.0094	0.1024	1.0793	0.0037	0.5233	1.0345	0.0062	0.2786	1.0454
GCE	-0.0832	0.0000	3.3784	-0.0876	0.0000	4.4057	-0.0223	0.2260	2.9614	-0.0115	0.5245	3.0972	-0.0182	0.3284	2.9662	-0.0078	0.6694	3.1114
EXP	0.1300	0.0000	1.5761	0.1391	0.0000	2.0228												
EXP * BAC							-0.0010	0.0002	1.1061	-0.0010	0.0002	1.1019						
EXP * CRC													0.0005	0.0299	1.0543	0.0005	0.0402	1.0534
Adj. R ²	0.998			0.687			0.998			0.567			0.980			0.559		
Hausman. Stats.	25.843 (0.001)						24.906 (0.001)						24.617 (0.001)					
F-stats (Prob.)	29255.67 (0.000)			194.570 (0.000)			25740.39 (0.000)			115.179 (0.000)			25329.52 (0.000)			112.542 (0.000)		

Source: Author's estimation.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by the financial sector and inflation have a positive impact on economic growth whereas, government consumption expenditure has negative impact on economic growth in high income countries.

Workers' Remittances

The results which explain the long run impact of workers' remittances and interaction terms of banking and currency crisis with workers' remittances on economic growth is presented in Table 4.40. Model I, II and III show the results of workers' remittances, interaction of workers' remittances and banking crisis and interaction of workers' remittances and currency crisis respectively. Results of all three models indicate that the prob value of Hausman test is significant (0.001), (0.001) and (0.001), which confirm the acceptance of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results indicate the positive and significant impact of workers' remittances on economic growth. This finding is consistent with the previous empirical studies. The coefficient of remittances is showing that the 1% increase in REM causes the increase in economic growth by 0.019%. Results of model II confirm that the impact of export on economic growth becomes negative and significant in the presence of systemic banking crises. Results of model III confirm that the impact of export on economic growth remains positive and significant in the presence of currency crises. However, the magnitude of the relationship is dragged down from 0.019% to 0.001. These findings conclude that the banking and currency crisis are harmful for the relationship of workers' remittances and economic growth in high income countries.

Table 4.40: Long Run Results of Remittances in High Income Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	16.722	0.000		15.840	0.000		17.818	0.000		17.008	0.000		18.162	0.000		17.300	0.000	
LAB	0.329	0.000	1.125	0.362	0.000	1.143	0.289	0.000	1.078	0.319	0.000	1.100	0.257	0.000	1.072	0.291	0.000	1.094
CAP	0.192	0.000	2.714	0.189	0.000	2.853	0.198	0.000	2.682	0.196	0.000	2.790	0.202	0.000	2.660	0.200	0.000	2.771
HED	0.086	0.000	1.184	0.093	0.000	1.228	0.100	0.000	1.137	0.108	0.000	1.162	0.106	0.000	1.124	0.115	0.000	1.150
INF	0.001	0.032	1.230	0.001	0.019	1.217	0.001	0.021	1.228	0.001	0.010	1.216	0.001	0.040	1.258	0.001	0.020	1.245
DCF	0.018	0.004	1.265	0.022	0.000	1.271	0.007	0.239	1.060	0.009	0.105	1.072	0.004	0.510	1.037	0.006	0.271	1.048
GCE	-0.024	0.187	2.963	-0.014	0.426	3.157	-0.022	0.234	2.960	-0.011	0.539	3.095	-0.019	0.319	2.965	-0.008	0.656	3.110
REM	0.019	0.000	1.440	0.021	0.000	1.430												
REM * BAC							-0.001	0.000	1.094	-0.001	0.000	1.090						
REM * CRC													0.001	0.041	1.052	0.001	0.055	1.050
Adj. R ²	0.998			0.590			0.998			0.567			0.998			0.559		
Hausman. Stats.	23.700 (0.001)						24.897 (0.001)						24.617 (0.001)					
F-stats (Prob.)	26518.72 (0.000)			127.467 (0.000)			25840.55 (0.000)			115.821 (0.000)			25305.60 (0.000)			112.371 (0.000)		

Source: Author's estimation.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by the financial sector and inflation have a positive impact on economic growth whereas, government consumption expenditure has negative impact on economic growth in high income countries.

4.7 Aggregate Results of 96 Countries

In this section, we present the aggregate results of empirical estimations of 96 countries and further discuss these results in the theoretical and conceptual context.

4.7.1 Unit Root Analyses

Table 4.41: Results of Stationary Analyses for Upper Middle Income Countries

Variables	Im, Pesaran and Shin			
	I(0)		I(1)	
	C	C&T	C	C&T
GDP	17.091	5.166	-7.878***	-9.138***
LAB	14.092	2.701	-6.531***	-5.546***
CAP	14.101	4.510	-10.799***	-11.578***
HED	3.2689	2.2214	-8.227***	-8.028***
INF	14.7102	1.6281	-29.530***	-24.723***
DCF	4.032	-1.055	-13.630***	-8.532***
GCE	18.554	5.406	-6.670***	-7.555***
FDI	1.155	-0.814	-19.908***	-15.357***
EXP	16.816	0.558	-19.009***	-20.715***
REM	8.461	-0.101	-13.460***	-10.381***
EXD	15.699	9.515	-3.531***	-3.854***

*, **, *** indicates significance level respectively at 1%, 5% and 10%.

Source: Authors' estimation.

We use, Im, Pesaran and Shin (2003) unit root test to analyze the stationary properties of our considered variables. The IPS test considers the unobserved heterogeneity among the cross sections and also eliminates the issues of serial correlation. The IPS unit root test has the best properties to judge the problem of a unit root in the small sample. The

desirable results for unit root test include that the variables should be non-stationary at the level and become stationary at the first difference. Table 4.41 represents the results of stationary analyses for the aggregate sample of 96 countries. We first, employed these tests on the level of each variable and then applied to the first difference. In both estimation procedures of level and first difference, we also analyze the results in two dimensions, i.e. with constant and with constant and trend. Results indicate that all the variables are non-stationary at level and become stationary at first difference. These results confirm that there is no problem of unit root in our variables and we can further use these variables for the long run estimations.

4.7.2 Cointegration Analyses

After having the confirmation from unit root test that our variables have a stationary properties of $I(1)$ which is the requirement to perform panel cointegration techniques, we applied two methods of panel cointegration i.e. Pedroni cointegration (1999) and Kao cointegration (1999) to analyze the long run relationship among foreign capital inflows, banking crisis, currency crisis and economic growth in the aggregate sample of 96 countries. These tests are based on the two-step residual based cointegration tests of Engle-Granger (1987). The Pedroni cointegration based on a seven statistical value. The Pedroni cointegration is useful to control the biasness of country size and also solve the issues of heterogeneity (Das & Choudhary, 2011). The Kao cointegration method follows the same basic approached as used in the Pedroni cointegration, but also control the issues of cross-section specific intercepts and homogenous coefficients.

Table 4.42: Results of Pedroni ((Engle-Granger based) Panel Cointegration in Aggregate Sample of 96 Countries

Estimates	Stats.	Prob.
GDP = f (LAB+CAP+HED+INF+DCF+GCE+BAC)		
Panel v-statistic	4.825	0.000
Panel rho-statistic	9.725	1.000
Panel PP statistic	-3.807	0.000
Panel ADF statistic	-4.318	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	12.241	1.000
Group PP statistic	-20.615	0.000
Group ADF statistic	-10.567	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+CRC)		
Panel v-statistic	6.624	0.000
Panel rho-statistic	10.691	1.000
Panel PP statistic	-5.009	0.000
Panel ADF statistic	-6.463	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	14.101	1.000
Group PP statistic	-19.649	0.000
Group ADF statistic	-12.077	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI)		
Panel v-statistic	7.561	0.000
Panel rho-statistic	10.737	1.000
Panel PP statistic	-7.591	0.000
Panel ADF statistic	-7.681	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	14.223	1.000
Group PP statistic	-24.768	0.000
Group ADF statistic	-14.568	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP)		
Panel v-statistic	3.147	0.001
Panel rho-statistic	11.086	1.000
Panel PP statistic	-7.458	0.000
Panel ADF statistic	-8.688	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	14.636	1.000
Group PP statistic	-23.763	0.000
Group ADF statistic	-11.513	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+REM)		
Panel v-statistic	6.524	0.000
Panel rho-statistic	10.635	1.000
Panel PP statistic	-12.282	0.000
Panel ADF statistic	-11.502	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	14.440	1.000
Group PP statistic	-28.472	0.000
Group ADF statistic	-16.184	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXD)		
Panel v-statistic	2.267	0.012
Panel rho-statistic	8.488	1.000
Panel PP statistic	-7.464	0.000
Panel ADF statistic	-6.138	0.000
Alternative Hypothesis: Individual AR Coefficient		
Group rho-statistic	11.336	1.000
Group PP statistic	-25.270	0.000
Group ADF statistic	-12.476	0.000

The null hypothesis of Pedroni's (1997) panel cointegration procedure is no cointegration

Source: Author's estimation.

Results of Pedroni cointegration are reported in Table 4.42 and 4.43, while the results of Kao cointegration are reported in table 4.44. The results of Pedroni cointegration method indicate the rejection of null hypothesis of no cointegration for the all test statistics at 10% or better level of significance except the panel v-statistics and rho-statistics. According to Pedroni (2004), Al-Irani (2006) and Pao & Tsai (2010) in small time dimensions, the panel v-statistics and rho-statistics may have a very low power. Furthermore, Guterrez (2003) concludes that group statistics (especially Augmented Dickey Fuller (ADF) and Phillips and Perron (PP) have the best power to judge the long run cointegration among the test statistics of Pedroni (1999). Therefore, we can conclude that the foreign capital inflows, banking crisis, currency crisis and economic growth are cointegrated in the long run in the aggregate sample of 96 countries.

Table 4.43: Results of Pedroni ((Engle-Granger based) Panel Cointegration of Interaction Terms in Aggregate Sample of 96 Countries

Estimates	Stats.	Prob.	Stats.	Prob.
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI*BAC)		GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI*CRC)		
Panel v-statistic	4.761	0.000	6.635	0.000
Panel rho-statistic	9.689	1.000	10.656	1.000
Panel PP statistic	-3.730	0.000	-4.993	0.000
Panel ADF statistic	-4.246	0.000	-6.159	0.000
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	12.225	1.000	14.105	1.000
Group PP statistic	-20.390	0.000	-19.747	0.000
Group ADF statistic	-10.433	0.000	-11.903	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP*BAC)		GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP*CRC)		
Panel v-statistic	4.825	0.000	6.612	0.000
Panel rho-statistic	9.727	1.000	10.685	1.000
Panel PP statistic	-3.783	0.000	-5.024	0.000
Panel ADF statistic	-4.283	0.000	-6.464	0.000
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	12.236	1.000	14.092	1.000
Group PP statistic	-20.587	0.000	-19.674	0.000
Group ADF statistic	-10.550	0.000	-12.057	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+REM*BAC)		GDP = f (LAB+CAP+HED+INF+DCF+GCE+REM*CRC)		
Panel v-statistic	4.786	0.000	6.616	0.000
Panel rho-statistic	9.749	1.000	10.628	1.000
Panel PP statistic	-3.716	0.000	-4.940	0.000
Panel ADF statistic	-4.211	0.000	-6.063	0.000
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	12.243	1.000	14.083	1.000
Group PP statistic	-20.557	0.000	-19.623	0.000

Group ADF statistic	-10.551	0.000	-11.869	0.000
	GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXD*BAC)		GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXD*CRC)	
Panel v-statistic	3.276	0.001	3.974	0.000
Panel rho-statistic	7.410	1.000	8.246	1.000
Panel PP statistic	-1.174	0.120	-3.478	0.000
Panel ADF statistic	-2.069	0.019	-4.526	0.000
Alternative Hypothesis: Individual AR Coefficient				
Group rho-statistic	9.362	1.000	10.874	1.000
Group PP statistic	-12.042	0.000	-15.960	0.000
Group ADF statistic	-8.141	0.000	-10.100	0.000

The null hypothesis of Pedroni's (1997) panel cointegration procedure is no cointegration

Source: Author's estimation.

Results of Kao cointegration are reported in Table 4.44. The results of the Kao cointegration method also indicate the rejection of the null hypothesis of no cointegration in the favor of valid long run cointegration for the all test statistics at the 1 % level of significance in an aggregate sample of 96 countries.

Table 4.44: Results of Kao (Engle-Granger based) Panel Cointegration in Aggregate Sample of 96 Countries

Estimates	Stats.	Prob.
GDP = f (LAB+CAP+HED+INF+DCF+GCE+BAC)		
Panel ADF statistic	-8.504	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+CRC)		
Panel ADF statistic	-8.644	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI)		
Panel ADF statistic	-8.816	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP)		
Panel ADF statistic	-8.895	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+REM)		
Panel ADF statistic	-8.276	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXD)		
Panel ADF statistic	-7.767	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI*BAC)		
Panel ADF statistic	-8.282	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+FDI*CRC)		
Panel ADF statistic	-8.911	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP*BAC)		
Panel ADF statistic	-8.265	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+EXP*CRC)		
Panel ADF statistic	-8.929	0.000
GDP = f (LAB+CAP+HED+INF+DCF+GCE+REM*BAC)		

Panel ADF statistic	-8.324	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+REM \cdot CRC)$		
Panel ADF statistic	-8.868	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+EXD \cdot BAC)$		
Panel ADF statistic	-8.780	0.000
$GDP = f(LAB+CAP+HED+INF+DCF+GCE+EXD \cdot CRC)$		
Panel ADF statistic	-9.482	0.000

The null hypothesis of Kao Residual Cointegration panel cointegration procedure is no cointegration
Source: Authors' estimation.

4.7.3 Long Run Analysis

After having the valid evidence of significant long run cointegration among considered variables, the next step is to estimate the long run coefficients. We used fixed effect and random effect methods to analyze the long run relationship. The Hausman test is used to select the best preferable model between fixed effect and random effect models (Greene, 2000). The null hypothesis of Hausman test is that the country effects are uncorrelated with the other regressors in the model (Hausman, 1978). If the country effect is correlated (null hypothesis is rejected), a random effect model violating the basic assumption of Gauss-Markov and produces the biased estimators. If null hypothesis is rejected, a fixed effect model is then preferred. Consequently, if the null hypothesis is accepted, the estimated results of random effect model is then preferred, and one should focus on results of random effect hereafter. In this section, we discuss the long run impact and coefficients of different independent variables on economic growth in the aggregate sample of 96 countries.

Banking Crisis and Currency Crisis

The results which explain the long run impact of banking crisis and currency crisis on economic growth is presented in Table 4.45. The results of banking crisis are reported in model I whereas, the results of currency crisis are reported in model II. Results of both models indicate that the prob value of Hausman test is significant (0.000) and (0.000), which confirm the acceptance of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results also indicate the negative and significant impact of banking crisis and currency crisis on economic growth. It is concluded that the banking and currency crises decrease the progress of the economic development. Results also conclude that the banking crisis and currency crisis, both have the equal/same negative impact on economic growth.

Table 4.45: Long Run Results of Banking and Currency Crisis in Aggregate Sample of 96 Countries

Variables	I						II					
	FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	15.120	0.000		14.324	0.000		15.153	0.000		14.382	0.000	
LAB	0.279	0.000	1.249	0.316	0.000	1.261	0.273	0.000	1.251	0.310	0.000	1.259
CAP	0.155	0.000	2.383	0.155	0.000	2.553	0.157	0.000	2.367	0.158	0.000	2.522
HED	0.026	0.001	1.323	0.024	0.001	1.349	0.029	0.000	1.312	0.027	0.000	1.334
INF	0.001	0.048	1.078	0.001	0.066	1.077	0.006	0.266	1.071	0.006	0.336	1.070
DCF	0.057	0.000	1.120	0.060	0.000	1.142	0.052	0.000	1.091	0.055	0.000	1.110
GCE	0.100	0.000	2.384	0.104	0.000	2.578	0.104	0.000	2.401	0.109	0.000	2.580
BAC	-0.024	0.000	1.067	-0.025	0.000	1.067						
CRC							-0.024	0.000	1.029	-0.024	0.000	1.031
Adj. R ²	0.998			0.587			0.998			0.587		
Hausman Stats. (Prob.)	64.806 (0.000)						65.116 (0.000)					
F-stats (Prob.)	21376.05 (0.000)			369.343 (0.000)			21517.35 (0.000)			368.0664 (0.000)		

Source: Authors' estimation.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by financial sector, inflation and government consumption expenditure have significant positive impact on economic growth in an aggregate sample of 96 countries.

Foreign Direct Investment

The results which explain the long run impact of foreign direct investment and interaction terms of banking and currency crisis with foreign direct investment on economic growth is presented in Table 4.46. Model I, II and III show the results of foreign direct investment, interaction of foreign direct investment and banking crisis and interaction of foreign direct investment and currency crisis respectively. Results of all three models indicate that the prob value of Hausman test is significant (0.000), (0.000) and (0.000), which confirm the acceptance of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results indicate the positive and significant impact of foreign direct investment on economic growth. The coefficient of foreign direct investment is showing that the 1% increase in FDI causes the increase in economic growth by 0.006%. This finding is consistent with the previous empirical studies of (Vudayagiri N Balasubramanyam et al., 1999; Nair-Reichert and Weinhold, 2001; Choe, 2003; Li and Liu, 2005; Rabiei and Masoudi, 2012; Omri and Kahouli, 2014; Olayemi, 2015; Yusoff and Nuh, 2015). Results of model II confirm that the impact of FDI on economic growth becomes significantly negative in the

presence of systemic banking crises. Results of model III further confirm that the impact of FDI on economic growth remains positive and significant in the presence of currency crises. However, the magnitude of the relationship is dropped down from 0.006 to 0.001. These findings conclude that the banking and currency crisis are harmful for the relationship of export and economic growth in aggregate sample.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by financial sector, inflation and government consumption expenditure have a positive impact on economic growth in aggregate sample.



Table 4.46: Long Run Results of Foreign Direct Investment in Aggregate Sample of 96 Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	15.1670	0.0000		14.3780	0.0000		15.1227	0.0000		14.3280	0.0000		15.1738	0.0000		14.4016	0.0000	
LAB	0.2781	0.0000	1.2494	0.3157	0.0000	1.2605	0.2788	0.0000	1.2494	0.3164	0.0000	1.2602	0.2730	0.0000	1.2508	0.3100	0.0000	1.2591
CAP	0.1519	0.0000	2.4964	0.1519	0.0000	2.6754	0.1544	0.0000	2.3843	0.1545	0.0000	2.5525	0.1570	0.0000	2.3676	0.1573	0.0000	2.5210
HED	0.0270	0.0003	1.3190	0.0250	0.0007	1.3443	0.0256	0.0006	1.3239	0.0235	0.0015	1.3486	0.0289	0.0001	1.3114	0.0268	0.0003	1.3325
INF	0.0001	0.1069	1.0637	0.0001	0.1463	1.0624	0.0001	0.0520	1.0738	0.0001	0.0717	1.0726	0.0001	0.2542	1.0701	0.0001	0.3212	1.0689
DCF	0.0534	0.0000	1.0863	0.0570	0.0000	1.1071	0.0567	0.0000	1.1176	0.0605	0.0000	1.1388	0.0520	0.0000	1.0899	0.0556	0.0000	1.1086
GCE	0.0995	0.0000	2.3845	0.1041	0.0000	2.5776	0.0997	0.0000	2.3845	0.1045	0.0000	2.5760	0.1039	0.0000	2.3973	0.1081	0.0000	2.5751
FDI	0.0059	0.0083	1.1582	0.0060	0.0064	1.1757												
FDI * BAC							-0.0012	0.0001	1.0618	-0.0012	0.0000	1.0620						
FDI * CRC													0.0012	0.0000	1.0223	0.0011	0.0000	1.0233
Adj. R ²	0.998				0.586		0.998				0.587		0.998				0.586	
Hausman. Stats.	63.723 (0.000)						64.781 (0.000)						65.014 (0.000)					
F-stats (Prob.)	21288.08 (0.000)			366.513 (0.000)			21402.00 (0.000)			369.420 (0.000)			21520.35 (0.000)			367.666 (0.000)		

Source: Authors' estimation.

Export of Goods and Services

The results which explain the long run impact of exports of goods and services and interaction terms of banking and currency crisis with exports of goods and services on economic growth is presented in Table 4.47. Model I, II and III show the results of exports of goods and services, interaction of exports and banking crisis and interaction of exports and currency crisis respectively. Results of all three models indicate that the prob value of Hausman test is significant (0.000), (0.000) and (0.000), which confirm the acceptance of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results indicate the positive and significant impact of exports of goods and services on economic growth. The coefficient of exports of goods and services is showing that the 1% increase in exports causes the increase in economic growth by 0.156%. This finding is consistent with the previous empirical studies. Results of model II confirm that the impact of exports on economic growth becomes significantly negative in the presence of systemic banking crises. Results of model III further confirm that the impact of exports of goods and services on economic growth remains positive and significant in the presence of currency crises. However, the magnitude of the relationship is dropped down from 0.156 to 0.0012. These findings conclude that the banking and currency crisis are harmful for the relationship of export and economic growth in aggregate sample.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by financial sector, inflation and government consumption expenditure have a positive impact on economic growth in aggregate sample.

Table 4.47: Long Run Results of Exports in Aggregate Sample of 96 Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	13.3184	0.0000		13.0000	0.0000		15.1230	0.0000		14.3280	0.0000		15.1741	0.0000		14.4024	0.0000	
LAB	0.3144	0.0000	1.2561	0.3352	0.0000	1.3130	0.2788	0.0000	1.2494	0.3164	0.0000	1.2603	0.2727	0.0000	1.2510	0.3097	0.0000	1.2593
CAP	0.1139	0.0000	2.5658	0.1135	0.0000	3.0018	0.1545	0.0000	2.3829	0.1547	0.0000	2.5514	0.1571	0.0000	2.3675	0.1574	0.0000	2.5207
HED	0.0257	0.0002	1.3119	0.0245	0.0003	1.4055	0.0257	0.0006	1.3232	0.0236	0.0014	1.3481	0.0290	0.0001	1.3115	0.0269	0.0002	1.3325
INF	0.0001	0.2800	1.0642	0.0004	0.4432	1.0628	0.0001	0.0511	1.0745	0.0001	0.0704	1.0734	0.0001	0.2565	1.0702	0.0001	0.3238	1.0690
DCF	0.0461	0.0000	1.0951	0.0485	0.0000	1.1548	0.0567	0.0000	1.1179	0.0605	0.0000	1.1392	0.0520	0.0000	1.0902	0.0556	0.0000	1.1089
GCE	0.0490	0.0000	2.5389	0.0459	0.0000	3.1612	0.0996	0.0000	2.3845	0.1043	0.0000	2.5764	0.1040	0.0000	2.3982	0.1083	0.0000	2.5758
EXP	0.1563	0.0000	1.6577	0.1566	0.0000	2.0233												
EXP * BAC							-0.0010	0.0001	1.0617	-0.0011	0.0000	1.0620						
EXP * CRC													0.0010	0.0000	1.0241	0.0010	0.0000	1.0252
Adj. R ²	0.998			0.693			0.998			0.587			0.998			0.586		
Hausman. Stats.	82.303 (0.000)						64.780 (0.000)						65.071 (0.000)					
F-stats (Prob.)	25452.65 (0.000)			585.892 (0.000)			21396.54 (0.000)			369.425 (0.000)			21524.66 (0.000)			367.707 (0.000)		

Source: Authors' estimation.

Workers' Remittances

The results which explain the long run impact of workers' remittances and interaction terms of banking and currency crisis with workers' remittances on economic growth is presented in Table 4.48. Model I, II and III show the results of workers' remittances, interaction of workers' remittances and banking crisis and interaction of workers' remittances and currency crisis respectively. Results of all three models indicate that the prob. value of Hausman test is significant (0.000), (0.000) and (0.000), which confirm the acceptance of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results indicate the positive and significant impact of workers' remittances on economic growth. The coefficient of REM is showing that the 1% increase in remittances causes the increase in economic growth by 0.009%. This finding is consistent with the previous empirical studies. Results of model II confirm that the impact of workers' remittances on economic growth becomes significantly negative in the presence of systemic banking crises. Results of model III further confirm that the impact of remittances on economic growth remains positive and significant in the presence of currency crises. However, the magnitude of the relationship is dropped down from 0.009 to 0.0012. These findings conclude that the banking and currency crisis are harmful for the relationship of workers' remittances and economic growth in aggregate sample.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by financial sector, inflation and government consumption expenditure have a positive impact on economic growth in aggregate sample.

Table 4.48: Long Run Results of Remittances in Aggregate Sample of 96 Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	14.8947	0.0000		14.1014	0.0000		15.1432	0.0000		14.3482	0.0000		15.1462	0.0000		14.3755	0.0000	
LAB	0.2934	0.0000	1.2706	0.3311	0.0000	1.2802	0.2775	0.0000	1.2494	0.3151	0.0000	1.2602	0.2749	0.0000	1.2500	0.3118	0.0000	1.2585
CAP	0.1535	0.0000	2.3947	0.1534	0.0000	2.5771	0.1543	0.0000	2.3845	0.1545	0.0000	2.5528	0.1571	0.0000	2.3676	0.1574	0.0000	2.5217
HED	0.0252	0.0008	1.3269	0.0231	0.0018	1.3545	0.0258	0.0005	1.3215	0.0238	0.0013	1.3463	0.0286	0.0001	1.3113	0.0266	0.0003	1.3325
INF	0.0001	0.0665	1.0685	0.0001	0.0893	1.0675	0.0001	0.0525	1.0733	0.0001	0.0727	1.0722	0.0001	0.2368	1.0691	0.0001	0.3016	1.0679
DCF	0.0548	0.0000	1.0919	0.0586	0.0000	1.1135	0.0566	0.0000	1.1146	0.0603	0.0000	1.1359	0.0521	0.0000	1.0896	0.0557	0.0000	1.1084
GCE	0.0952	0.0000	2.4048	0.0993	0.0000	2.6184	0.0999	0.0000	2.3846	0.1046	0.0000	2.5761	0.1036	0.0000	2.3967	0.1079	0.0000	2.5752
REM	0.0092	0.0001	1.1228	0.0100	0.0000	1.1354												
REM * BAC							-0.0012	0.0001	1.0573	-0.0013	0.0000	1.0576						
REM * CRC													0.0012	0.0000	1.0199	0.0012	0.0000	1.0210
Adj. R ²	0.998				0.591		0.998				0.586		0.998				0.586	
Hausman. Stats.	63.336 (0.000)						64.735 (0.000)						65.057 (0.000)					
F-stats (Prob.)	21404.05 (0.000)			374.246 (0.000)			21404.85 (0.000)			369.491 (0.000)			21498.14 (0.000)			367.346 (0.000)		

Source: Authors' estimation.

External Debt

The results which explain the long run impact of external debt and interaction terms of banking and currency crisis with external debt on economic growth is presented in Table 4.49. Model I, II and III show the results of external debt, interaction of external debt and banking crisis and interaction of external debt and currency crisis respectively. Results of all three models indicate that the prob value of Hausman test is significant (0.000), (0.000) and (0.000), which confirm the acceptance of null hypothesis and concluded that the fixed effect model is preferred over random effect model. Furthermore, the statistical value of Variance Inflation factor (VIF) also suggest that there is no issue of multicollinearity exist among the independent variables of estimated models. Results indicate the positive and significant impact of external debt on economic growth. This finding is consistent with the previous empirical studies. The coefficient of external debt is showing that the 1% increase in external debt causes the increase in economic growth by 0.034%. Results of model II confirm that the impact of external debt on economic growth becomes negative, but insignificant in the presence of systemic banking crises. Results of model III further confirm that the impact of external debt on economic growth remain positive and significant in the presence of currency crises. However, the magnitude of the relationship is dropped down from 0.034 to 0.001. These findings conclude that the banking and currency crisis are harmful for the relationship of external debt and economic growth in aggregate sample.

Furthermore, the results of control variables show that the labor force, capital formation, higher education development, domestic credit by financial sector, inflation and government consumption expenditure have a positive impact on economic growth in aggregate sample.

Table 4.49: Long Run Results of External Debt in Aggregate Sample of 96 Countries

Variables	I						II						III					
	FE			RE			FE			RE			FE			RE		
	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF	Coeff.	Prob.	VIF
α	14.0682	0.0000		12.6151	0.0000		15.9360	0.0000		14.6787	0.0000		15.8372	0.0000		14.6171	0.0000	
LAB	0.3020	0.0000	1.5293	0.3693	0.0000	1.4176	0.2151	0.0000	1.2484	0.2737	0.0000	1.2311	0.2171	0.0000	1.2479	0.2745	0.0000	1.2313
CAP	0.1155	0.0000	2.0057	0.1179	0.0000	2.2506	0.1206	0.0000	1.9875	0.1241	0.0000	2.1210	0.1216	0.0000	1.9884	0.1251	0.0000	2.1205
HED	0.0083	0.3330	1.2466	0.0085	0.3148	1.2950	0.0010	0.9068	1.2119	-0.0010	0.9084	1.2364	0.0021	0.8058	1.2123	0.0003	0.9764	1.2365
INF	0.0001	0.0183	1.0761	0.0001	0.0328	1.0740	0.0001	0.0214	1.0998	0.0001	0.0329	1.0983	0.0001	0.0589	1.0887	0.0001	0.0960	1.0865
DCF	0.0657	0.0000	1.2412	0.0679	0.0000	1.2855	0.0761	0.0000	1.1467	0.0809	0.0000	1.1620	0.0732	0.0000	1.1355	0.0775	0.0000	1.1526
GCE	0.1309	0.0000	2.0303	0.1376	0.0000	2.2861	0.1249	0.0000	2.0161	0.1315	0.0000	2.1688	0.1306	0.0000	2.0399	0.1369	0.0000	2.1929
EXD	0.0348	0.0000	1.5429	0.0413	0.0000	1.4389												
EXD * BAC							-0.0001	0.7945	1.0475	-0.0003	0.5281	1.0446						
EXD * CRC													0.0011	0.0002	1.0533	0.0011	0.0002	1.0539
Adj. R ²	0.998			0.555			0.998			0.512			0.998			0.517		
Hausman. Stats.	33.218 (0.000)						39.987 (0.000)						39.900 (0.000)					
F-stats (Prob.)	19728.22 (0.000)			212.104 (0.000)			19294.80 (0.000)			177.916 (0.000)			19534.29 (0.000)			181.664 (0.000)		

Source: Authors' estimation.

4.8 Fully Modified Ordinary Least Square

In some previous empirical studies, it is argued that the fixed and random effect model sometime fails to deal with the issues of endogeneity. The endogeneity is define as a problem occurs when an explanatory variable is correlated with the error term. Therefore, to ascertain that there will be no issues of endogeneity and also to confirm the robustness of our initial results of fixed and random effect model, we used Fully Modified Ordinary Least Square (FMOLS) estimation technique. The *FMOLS* modifies the Ordinary Least Square (*OLS*) to control the problems of serial correlation and endogeneity in the regressors that results from the existence of a cointegrating relationship.¹⁸ Kao and Chiang (2000) and Pedroni (2001) argue that FMOLS panel technique takes into account the intercept and the endogeneity issue. The estimates are robust to endogenous regressors. It also removes omission variable bias, serial correlation of the regressors and homogeneity restriction on long run parameters. The same argument is supported by Salahuddin, Alam and Ozturk (2016) and Hu, Xiao, Deng, Xiao and Wang (2015).

Low Income Countries

The results of *FMOLS* for low income countries are reported in Table 4.50 and 4.51. It is confirmed from the results of *FMOLS* that the coefficient of all focus variable are having the same sign and significance after applying *FMOLS*. Results suggest the negative and significant influence of banking and currency crisis on economic growth. Results further reveal that banking and currency crisis deteriorate the positive influence of foreign capital inflows on economic growth. Consequently, it can be concluded that

¹⁸ For details see, Philips and Hansen (1990), Hansen (1995)

the relationship between foreign capital inflows, systemic banking crisis, currency crisis and economic growth in low income countries are remain same and results of fixed effect and random effect models are robust.

Table 4.50: Results of FMOLS in Low Income Countries

Variables	I		II		III		IV		V		VI	
	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
LAB	-0.687	0.000	0.965	0.000	0.962	0.000	0.491	0.000	0.972	0.000	0.981	0.000
CAP	0.032	0.001	0.038	0.000	0.035	0.000	-0.020	0.000	0.040	0.000	0.035	0.000
HED	0.002	0.000	0.003	0.000	0.003	0.000	0.001	0.000	0.003	0.000	0.003	0.000
INF	0.310	0.000	-0.026	0.000	-0.025	0.000	0.019	0.000	-0.026	0.000	-0.029	0.000
DCF	0.093	0.000	0.108	0.000	0.105	0.000	0.066	0.000	0.106	0.000	0.101	0.000
GCE	0.058	0.001	0.119	0.000	0.123	0.000	0.074	0.000	0.123	0.000	0.128	0.000
BAC	-0.124	0.000										
CRC			-0.008	0.032								
FDI					0.002	0.006						
EXP							0.212	0.000				
REM									-0.003	0.018		
EXD											0.042	0.000
Adj. R²	0.998		0.997		0.997		0.997		0.998		0.997	

Source: Authors' estimation.

Note: Model I, II, III, IV, V VI represents the results of banking crises, currency crises, foreign direct investment, export of goods and services workers' remittances and external debt models, respectively.

Table 4.51: Results of FMOLS in Low Income Countries with different interaction terms

Variables	I	II	III	IV	V	VI	VII	VIII
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
LAB	-0.680***	0.965***	-0.686***	0.964***	-0.633***	0.964***	-0.689***	0.964***
CAP	0.031***	0.038***	0.032***	0.038***	0.031***	0.037***	0.032***	0.038***
HED	0.001***	0.003***	0.001***	0.003***	0.001***	0.003***	0.001***	0.003***
INF	0.310***	-0.025***	0.318***	-0.025***	0.308***	-0.025***	0.310***	-0.025***
DCF	0.093***	0.107***	0.093***	0.101***	0.092***	0.108***	0.093***	0.107***
GCE	0.055***	0.119***	0.057***	0.119***	0.047***	0.118***	0.057***	0.119***
FDI * BAC	-0.007***							
FDI * CRC		-0.004***						
EXP * BAC			-0.006***					
EXP * CRC				-0.003*				
REM * BAC					-0.007***			
REM * CRC						-0.006***		
EXD * BAC							-0.005***	
EXD * CRC								-0.003**

Adj. R²	0.997	0.997	0.997	0.998	0.998	0.997	0.997	0.997
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*, **, *** show significance at level of 10%, 5% and 1 % respectively

Note: Model I, II, III, IV, V, VI, VII, VIII represents the results of different interaction terms of foreign direct investment and banking crises, foreign direct investment and currency crises, exports and banking crises, exports and currency crises, remittances and banking crises, remittances and currency crises, external debt and banking crises, external debt and currency crises,

Source: Authors' estimation.

Lower Middle Income Countries

The results of *FMOLS* for lower middle income countries are reported in Table 4.52 and 4.53. It is confirmed from the results of *FMOLS* that the coefficient of all focus variable are having the same sign and significance after applying *FMOLS*. Results suggest the negative and significant influence of banking and currency crisis on economic growth. Results further reveal that banking and currency crisis deteriorate the positive influence of foreign capital inflows on economic growth. Consequently, it can be concluded that the relationship between foreign capital inflows, systemic banking crisis, currency crisis and economic growth in lower middle income countries are remain same and results of fixed effect and random effect models are robust.

Table 4.52: Results of FMOLS in Lower Middle Income Countries

Variables	I		II		III		IV		V		VI	
	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
LAB	0.349	0.000	0.193	0.000	0.198	0.000	0.080	0.000	0.237	0.000	0.257	0.000
CAP	0.177	0.000	0.176	0.000	0.164	0.000	0.107	0.000	0.161	0.000	0.170	0.000
HED	0.001	0.000	0.000	0.172	0.001	0.000	0.001	0.000	0.001	0.000	0.000	0.001
INF	0.110	0.000	0.123	0.000	0.121	0.000	0.122	0.000	0.101	0.000	0.107	0.000
DCF	0.100	0.000	0.076	0.000	0.077	0.000	0.055	0.000	0.074	0.000	0.060	0.000
GCE	0.039	0.000	0.060	0.000	0.065	0.000	0.040	0.000	0.047	0.000	0.063	0.000
BAC	-0.061	0.000										
CRC			-0.009	0.004								
FDI					0.007	0.000						
EXP							0.137	0.000				
REM									0.028	0.000		
EXD											0.036	0.000
Adj. R²	0.997		0.997		0.998		0.998		0.997		0.997	

Source: Authors' estimation.

Note: Model I, II, III, IV, V VI represents the results of banking crises, currency crises, foreign direct investment, export of goods and services workers' remittances and external debt models, respectively.

Table 4.53: Results of FMOLS in Lower Middle Income Countries with different interaction terms

Variables	I	II	III	IV	V	VI	VII	VIII
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
LAB	0.352***	0.193***	0.351***	0.193***	0.345***	0.195***	0.351***	0.193***
CAP	0.177***	0.176***	0.178***	0.173***	0.178***	0.176***	0.177***	0.176***
HED	0.007***	0.002	0.007***	0.002	0.007***	0.0002	0.007***	0.001
INF	0.109***	0.123***	0.119***	0.123***	0.111***	0.122***	0.118***	0.123***
DCF	0.100***	0.076***	0.099***	0.076***	0.100***	0.076***	0.100***	0.076***
GCE	0.037***	0.059***	0.0371***	0.059***	0.037***	0.059***	0.037***	0.059***
FDI * BAC	-0.003***							
FDI * CRC		0.004***						
EXP * BAC			-0.002***					
EXP * CRC				0.003***				
REM * BAC					-0.003***			
REM * CRC						0.005***		
EXD * BAC							-0.002***	
EXD * CRC								0.004***
Adj. R²	0.997	0.997	0.997	0.998	0.998	0.997	0.997	0.997

*, **, *** show significance at level of 10%, 5% and 1 % respectively

Note: Model I, II, III, IV, V, VI, VII, VIII represents the results of different interaction terms of foreign direct investment and banking crises, foreign direct investment and currency crises, exports and banking crises, exports and currency crises, remittances and banking crises, remittances and currency crises, external debt and banking crises, external debt and currency crises,

Source: Authors' estimation.

Upper Middle Income Countries

The results of *FMOLS* for upper middle income countries are reported in Table 4.54 and 4.55. It is confirmed from the results of *FMOLS* that the coefficient of all focus variable are having the same sign and significance after applying *FMOLS*. Results suggest the negative and significant influence of banking and currency crisis on economic growth. Results further reveal that banking and currency crisis deteriorate the positive influence of foreign capital inflows on economic growth. Consequently, it can be concluded that the relationship between foreign capital inflows, systemic banking crisis, currency crisis and economic growth in upper middle income countries are remain same and results of fixed effect and random effect models are robust.

Table 4.54: Results of FMOLS in Upper Middle Income Countries

Variables	I		II		III		IV		V		VI	
	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
LAB	0.4289	0.0000	0.4557	0.0000	0.4715	0.0000	0.4793	0.0000	0.4636	0.0000	0.4931	0.0000
CAP	0.1186	0.0000	0.0942	0.0000	0.1162	0.0001	0.0566	0.0000	0.1317	0.0000	0.1243	0.0000
HED	0.0002	0.0000	0.0002	0.0000	0.0000	0.8602	0.0002	0.0000	0.0003	0.0000	0.0003	0.0000
INF	0.0276	0.0000	0.0262	0.0000	0.0020	0.9403	-0.0180	0.0000	0.0355	0.0000	0.0215	0.0000
DCF	0.0519	0.0000	0.0610	0.0000	0.0756	0.0000	0.0488	0.0000	0.0648	0.0000	0.0462	0.0000
GCE	0.2270	0.0000	0.2181	0.0000	0.1894	0.0000	0.0961	0.0000	0.1846	0.0000	0.1731	0.0000
BAC	-0.0310	0.0000										
CRC			-0.0007	0.7913								
FDI					0.0219	0.0138						
EXP							0.1988	0.0000				
REM									0.0111	0.0000		
EXD											0.0474	0.0000
Adj. R²	0.997		0.997		0.997		0.998		0.998		0.997	

Source: Authors' estimation.

Note: Model I, II, III, IV, V VI represents the results of banking crises, currency crises, foreign direct investment, export of goods and services workers' remittances and external debt models, respectively.

Table 4.55: Results of FMOLS in Upper Middle Income Countries with different interaction terms

Variables	I	II	III	IV	V	VI	VII	VIII
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
LAB	0.426***	0.455***	0.427***	0.455***	0.431***	0.455***	0.428***	0.455***
CAP	0.117***	0.094***	0.117***	0.094***	0.118***	0.094***	0.118***	0.094***
HED	0.002***	0.002***	0.002***	0.000***	0.002***	0.002***	0.002***	0.002***
INF	0.024***	0.026***	0.025***	0.026***	0.025***	0.026***	0.025***	0.026***
DCF	0.053***	0.060***	0.052***	0.060***	0.052***	0.060***	0.052***	0.060***
GCE	0.226***	0.218***	0.226***	0.218***	0.226***	0.218***	0.226***	0.218***
FDI * BAC	0.009***							
FDI * CRC		0.008**						
EXP * BAC			0.001***					
EXP * CRC				0.005**				
REM * BAC					0.001***			
REM * CRC						0.006***		
EXD * BAC							0.001***	
EXD * CRC								0.001*
Adj. R²	0.997	0.997	0.997	0.998	0.998	0.997	0.997	0.997

*, **, *** show significance at level of 10%, 5% and 1 % respectively

Note: Model I, II, III, IV, V, VI, VII, VIII represents the results of different interaction terms of foreign direct investment and banking crises, foreign direct investment and currency crises, exports and banking crises, exports and currency crises, remittances and banking crises, remittances and currency crises, external debt and banking crises, external debt and currency crises,

Source: Authors' estimation.

High Income Countries

The results of *FMOLS* for high income countries are reported in Table 4.56 and 4.57. It is confirmed from the results of *FMOLS* that the coefficient of all focus variable are having the same sign and significance after applying *FMOLS*. Results suggest the negative and significant influence of banking and currency crisis on economic growth. Results further reveal that banking and currency crisis deteriorate the positive influence of foreign capital inflows on economic growth. Consequently it can be concluded that the relationship between foreign capital inflows, systemic banking crisis, currency crisis and economic growth in high income countries are remain same and results of fixed effect and random effect models are robust.

Table 4.56: Results of FMOLS in High Income Countries

Variables	I		II		III		IV		V	
	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
LAB	0.381	0.000	0.435	0.000	0.439	0.000	0.425	0.000	0.506	0.000
CAP	0.171	0.000	0.189	0.000	0.176	0.000	0.193	0.000	0.179	0.000
HED	0.002	0.000	0.002	0.000	0.002	0.000	0.000	0.034	0.001	0.000
INF	0.184	0.000	0.200	0.000	0.200	0.000	0.124	0.000	0.152	0.000
DCF	0.020	0.000	0.012	0.000	0.013	0.000	0.020	0.000	0.031	0.000
GCE	0.065	0.000	0.028	0.000	0.029	0.000	-0.122	0.000	0.002	0.652
BAC	-0.032	0.000								
CRC			-0.007	0.001						
FDI					0.011	0.000				
EXP							0.150	0.000		
REM									0.029	0.000
Adj. R²	0.997		0.997		0.997		0.998		0.998	

Source: Authors' estimation.

Note: Model I, II, III, IV, V VI represents the results of banking crises, currency crises, foreign direct investment, export of goods and services workers' remittances and external debt models, respectively.

Table 4.57: Results of FMOLS in High Income Countries with different interaction terms

Variables	I	II	III	IV	V	VI
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
LAB	0.379***	0.435***	0.381***	0.436***	0.383***	0.436***
CAP	0.171***	0.188***	0.171***	0.189***	0.170***	0.189***
HED	0.002***	0.001***	0.002***	0.001***	0.002***	0.001***
INF	0.184***	0.199***	0.184***	0.199***	0.184***	0.199***
DCF	0.019***	0.012***	0.019***	0.012***	0.019***	0.012***
GCE	0.065***	0.028***	0.064***	0.027***	0.065***	0.027***
FDI * BAC	-0.001***					
FDI * CRC		0.003***				
EXP * BAC			-0.001***			
EXP * CRC				0.002***		
REM * BAC					-0.001***	
REM * CRC						0.002***
Adj. R²	0.997	0.997	0.997	0.998	0.998	0.997

*, **, *** show significance at level of 10%, 5% and 1 % respectively

Note: Model I, II, III, IV, V, VI, VII, VIII represents the results of different interaction terms of foreign direct investment and banking crises, foreign direct investment and currency crises, exports and banking crises, exports and currency crises, remittances and banking crises, remittances and currency crises, external debt and banking crises, external debt and currency crises,

Source: Authors' estimation.

Aggregate Sample of 96 Countries

The results of *FMOLS* for the aggregate sample of 96 countries are reported in Table 4.58 and 4.59. It is confirmed from the results of *FMOLS* that the coefficient of all focus variable are having the same sign and significance after applying *FMOLS*. Results suggest the negative and significant influence of banking and currency crisis on economic growth. Results further reveal that banking and currency crisis deteriorate the positive influence of foreign capital inflows on economic growth. Consequently it can be concluded that the relationship between foreign capital inflows, systemic banking crisis, currency crisis and economic growth in aggregate sample of 96 countries are remain same and results of fixed effect and random effect models are robust.

Table 4.58: Results of FMOLS in in Aggregate Sample of 96 Countries

Variables	I		II		III		IV		V		VI	
	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.	Coeff.	Prob.
LAB	0.3490	0.0000	0.3740	0.0000	0.4056	0.0000	0.3503	0.0000	0.4183	0.0000	0.4725	0.0000
CAP	0.1682	0.0000	0.1471	0.0000	0.1493	0.0000	0.1098	0.0000	0.1512	0.0000	0.1248	0.0000
HED	0.0003	0.0000	0.0002	0.0000	0.0002	0.0000	0.0001	0.0000	0.0002	0.0000	0.0002	0.0000
INF	0.0919	0.0000	0.0567	0.0000	0.0434	0.0000	0.0376	0.0000	0.0386	0.0000	0.0267	0.0000
DCF	0.0571	0.0000	0.0526	0.0000	0.0570	0.0000	0.0449	0.0000	0.0586	0.0000	0.0568	0.0000
GCE	0.1010	0.0000	0.1211	0.0000	0.1180	0.0000	0.0278	0.0000	0.1065	0.0000	0.1335	0.0000
BAC	-0.0314	0.0000										
CRC			-0.0090	0.0000								
FDI					0.0075	0.0000						
EXP							0.1597	0.0000				
REM									0.0169	0.0000		
EXD											0.0575	0.0000
Adj. R²	0.997		0.997		0.997		0.998		0.998		0.997	

Source: Authors' estimation.

Table 4.59: Results of FMOLS in in Aggregate Sample of 96 Countries with different interaction terms

Variables	I	II	III	IV	V	VI	VII	VIII
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
LAB	0.352***	0.374***	0.350***	0.374***	0.347***	0.374***	0.392***	0.397***
CAP	0.167***	0.147***	0.168***	0.147***	0.167***	0.147***	0.142***	0.122***
HED	0.002***	0.001***	0.002***	0.000***	0.002***	0.001***	0.002***	0.001***
INF	0.091***	0.056***	0.091***	0.056***	0.092***	0.056***	0.056***	0.029***
DCF	0.057***	0.052***	0.057***	0.052***	0.056***	0.052***	0.080***	0.073***
GCE	0.101***	0.121***	0.101***	0.121***	0.101***	0.120***	0.138***	0.154***
FDI * BAC	-0.001***							
FDI * CRC		0.004***						
EXP * BAC			-0.001***					
EXP * CRC				0.003***				
REM * BAC					-0.001***			
REM * CRC						0.004***		
EXD * BAC							-0.008***	
EXD * CRC								0.001***
Adj. R²	0.997	0.997	0.997	0.998	0.998	0.997	0.997	0.997

*, **, *** show significance at level of 10%, 5% and 1 % respectively

Note: Model I, II, III, IV, V, VI, VII, VIII represents the results of different interaction terms of foreign direct invest foreign direct investment and currency crises, exports and banking crises, exports and currency crises, remittances ar and currency crises, external debt and banking crises, external debt and currency crises,

Source: Authors' estimation.

4.9 Discussion of Result

In this section, we discuss the theoretical and conceptual underpinning of earlier presented results of different income level countries. The short summary of earlier presented results is reported in Table 4.60. Results indicate the negative and significant influence of systemic banking crisis in LI, LMI, UMI, HI and aggregate samples of 96 countries. This suggests that banking crisis leads to decline in the growth of an economy. It is concluded that the banking crisis most affects the low income countries whereas high income countries least affect by the banking crisis. Previously, empirical studies also report that the impact of banking crisis mainly decreases the growth of an economy (Lindgren, Garcia, and Saal (1996); Chor & Manova, 2012; Iacovone & Zavacka, 2009). These studies conclude that the economies which are heavily dependent on external financing, produce the worst performance in financial distress period. In the period of financial crisis, the production and income of an economy are lower down. The banking crisis leads to generate the negative sentiments among foreign investors about future economic growth during (Bogach & Noy, 2012; Dornean et al., 2012; Skovgaard Poulsen & Hufbauer, 2011).

Results further indicate the negative and significant influence of currency crises in LI, LMI, UMI, HI and aggregate sample of 96 countries. This suggests that a currency crisis leads to decline in the growth of an economy. It is also concluded that the currency crisis most affects the upper middle income countries whereas, low income countries least affect by currency crisis. A currency crisis is considered a sudden loss in confidence and consequent depreciation of the national currency in relation to other currencies. Furthermore, the drop in exchange rates during the financial crisis worse the

economic conditions and it is prolonged as long as government continues to monetize its deficit.

Table 4.60: Summary of Estimation Results of all Countries

		Low Income	Lower Middle Income	Upper Middle Income	High Income	Complete Sample
BAC	Coefficient	-0.1048	-0.0366	-0.0399	-0.0241	-0.0237
	Prob. Value	0.0626	0.0024	0.0045	0.0004	0.0002
CRC	Coefficient	-0.0034	-0.0252	-0.0408	-0.0128	-0.0244
	Prob. Value	0.0050	0.0031	0.0001	0.0284	0.0000
FDI	Coefficient	0.0071	0.0071	0.0112	0.0066	0.0059
	Prob. Value	0.2279	0.0591	0.0498	0.0114	0.0083
FDI*BAC	Coefficient	-0.0068	-0.0020	0.0017	-0.0011	-0.0012
	Prob. Value	0.0501	0.0010	0.0109	0.0003	0.0001
FDI*CRC	Coefficient	-0.0039	0.0010	0.0018	0.0006	0.0012
	Prob. Value	0.6732	0.0182	0.0005	0.0244	0.0000
EXP	Coefficient	0.2658	0.1044	0.1919	0.1300	0.1563
	Prob. Value	0.0000	0.0000	0.0000	0.0000	0.0000
EXP*BAC	Coefficient	-0.0049	-0.0017	0.0015	-0.0010	-0.0010
	Prob. Value	0.0770	0.0013	0.0084	0.0002	0.0001
EXP*CRC	Coefficient	0.0015	0.0011	0.0016	0.0005	0.0010
	Prob. Value	0.7965	0.0038	0.0004	0.0299	0.0000
REM	Coefficient	-0.0075	0.0127	0.0327	0.0194	0.0092
	Prob. Value	0.3401	0.0049	0.0456	0.0000	0.0001
REM*BAC	Coefficient	-0.0078	-0.0017	0.0019	-0.0013	-0.0012
	Prob. Value	0.0251	0.0061	0.0057	0.0001	0.0001
REM*CRC	Coefficient	-0.0038	0.0008	0.0018	0.0006	0.0012
	Prob. Value	0.6962	0.0425	0.0007	0.0409	0.0000
EXD	Coefficient	0.0715	-0.0468	0.0419		0.0348
	Prob. Value	0.0029	0.0000	0.0001		0.0000
EXD*BAC	Coefficient	-0.0048	0.0034	0.0016		-0.0011
	Prob. Value	0.0573	0.0835	0.0054		0.7945
EXD*CRC	Coefficient	-0.0004	-0.0044	0.0017		0.0011
	Prob. Value	0.6428	0.0084	0.0002		0.0002

Results conclude the positive influence of FDI on economic growth in all income level countries. The FDI has the highest positive impact in upper middle income countries, these are the most emerging economies and has the highest inflows of foreign direct

investment. These results are consistent with the past empirical studies (Campos & Kinoshita, 2002; Nicolini & Resmini, 2010; Siddique et al., 2012) Foreign direct investment are perceived as a factor of economic growth, a complement to domestic investment and a source of financing of the current account deficit. FDI contributes the host country in the form of technological externalities, the formation of human capital or have access to foreign markets which lead to long-term economic growth. FDI also resulted a reduction in unemployment by creating more employment opportunities in host economy.

In the case of FDI, the results confirm that the impact of foreign direct investment on economic growth becomes negative and significant in the presence of systemic banking crises in LI, LMI and HI countries whereas, the relationship remains positive and significant in the UMI however, the magnitude of the relationship is drop down. Results also confirm the impact of foreign direct investment on economic growth remain positive and significant in the presence of currency crises. However, the magnitude of relationship is significantly drop down in all income level countries. These findings conclude that the banking and currency crisis are harmful for the relationship of foreign direct investment and economic growth in all income level countries.

In the period of financial crisis, entrance of foreign companies in the imperfect competitive markets may leads to reduce market share of domestic producers. Capabilities of economies of scale also suffer in domestic producers because of loss of market share, which also have a negative impact on productivity. The introduction of

new technologies assumes or requires the existence of skilled labor in the host country, which are capable and trained on using those technologies. If the supply of labor is shorter in the host country than it leads to a negative impact on production and economic growth.

Results conclude the positive influence of exports of goods and services on economic growth in all income level countries. The findings are consistent with (Balaguer & Cantavella-Jorda, 2002; Dodaro, 1991; Omri, Daly, Rault, & Chaibi, 2015; Tang, Lai, & Ozturk, 2015; Vamvoukas, 2007). The export has the highest positive impact in low income countries followed by upper middle income countries. The spillover effect of the export sector in the production process of an economy contributes in the total productivity of a country. Moreover, export help in importing high value technology products and inputs that cause increases in the productive capacity of a country which also leads to improve the efficiency in the production process. The realization of economies of scale results exports rises with the help of rise in productivity. This increment in exports can further reduce cost, which may also increase in the productivity growth.

In the case of exports of goods and services, the results confirm that the impact of exports of goods and services on economic growth becomes negative and significant in the presence of systemic banking crises in LI, LMI and HI countries whereas, the relationship remains positive and significant in the UMI however, the magnitude of relationship is dropped down. Results also confirm the impact of exports on economic

growth remain positive and significant in the presence of currency crises. However, the magnitude of relationship is significantly drop down in all income level countries. These findings conclude that the banking and currency crisis are harmful for the relationship of exports of goods and services and economic growth in all income level countries. The possibility of a negative linkage between economic growth and exchange rate may exist, meaning that, rise in economic output level decline in the export growth level. On the same note, the decrease in economic growth in the presence of export growth occurs when growth in exports is appreciating against the domestic consumption.

Results also conclude the positive influence of workers' remittances on economic growth in all income level countries. The remittances have the highest positive impact in upper middle income countries. The findings are consistent with (N Catrinescu & Leon, 2010; Faini, 2007; Ramirez & Sharma, 2008; World Bank, 2006b; Ziesemer, 2006; Cooray, 2012; Nsiah and Fayissa, 2013; Jawaid and Raza, 2014; Goschin, 2014; M. Al Mamun, Sohag, Uddin, and Shahbaz, 2015; Oshota and Badejo, 2015). Workers' remittances have been proved to be a source of alleviating poverty in developing countries. The increase in workers' remittances also resulted in an increase in the private investments. Furthermore, remittances are found to be in a positive trend when the host economy suffers a recession because of financial crisis, political conflicts or natural disasters, etc. as expatriates remit more during a crucial time for so that they can support their families and nations accordingly.

In the case of workers' remittances, the results confirm that the impact of remittances on economic growth becomes negative and significant in the presence of systemic banking crises in LI, LMI and HI countries whereas, the relationship remains positive and significant in the UMI however, the magnitude of the relationship is drop down. Results also confirm the impact of remittances on economic growth remain positive and significant in the presence of currency crises. However, the magnitude of relationship is significantly drop down in all income level countries. These findings conclude that the banking and currency crisis are harmful for the relationship of remittances and economic growth in all income level countries. The economic growth may have a negative impact of remittances in the host country which causes the decrease in labor force participation. This type of capital inflows may consider just as transfer of income. Furthermore, this transfer of income may be stressed by the severe moral hazard problem. In this regard, the recipients promotes to use alternate way of consumption and the labor market effort reduce accordingly. The migrant's remittances may not be considered as profit driven due to spending on consumption rather than on investment activities. The imports may increase through remittances in the country which further widen the deficit in balance of payment.

Furthermore, the another reason behind this negative association is when the migration increases in the country, it increases the dependency on remittance. This dependence on remittance increases the income inequality in the region, which hinders the economic development. The high remittance inflow results in an appreciation of the exchange rate, which affects the sectorial production, especially the trade sector which slow down the

economic growth. Furthermore, the emigrants that usually go aboard are highly educated and skilled which causes the brain drain within the economy and reduces the economic development, because home country invested the money, effort and time in their education. The negative relationship is also consistent with the past empirical literature of Chami et al. (2003), Chami, Cosimano, and Gapen (2006), Amuedo-Dorantes & Pozo, 2004; Lartey, Mandelman, & Acosta, 2008; Lopez, Bussolo, & Molina, 2007, Jawaid and Raza (2014), Kumar (2014), Oshota and Badejo (2015), Jouini (2015).

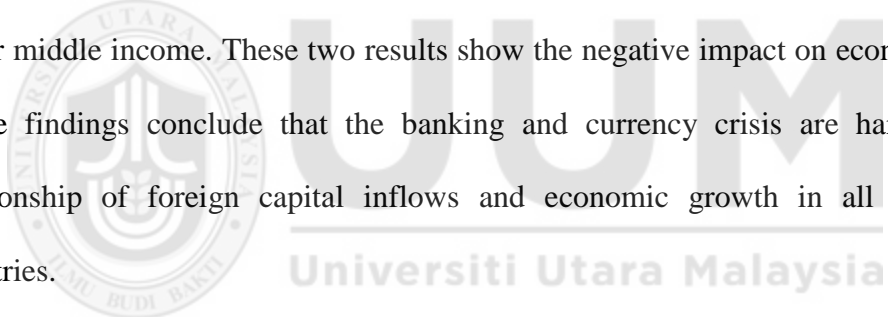
Results also conclude the positive influence of foreign debt on economic growth in all income level countries. The foreign debt has the highest positive impact in low income countries followed by lower middle income countries. The findings are consistent with D. Cohen (1991); Çiçek, Gözegir, and Çevik (2010); Bakar and Hassan (2011); Umutlu, Alizadeh, and Erkök (2011); Kasidi and Said (2013); Daud et al. (2013); Wahiba (2014); Fincke and Greiner (2015). The countries borrow for two broad reasons; macroeconomic reason that is to finance higher levels of consumption and investment or to finance the transitory balance of payment deficit and avoid budget constraint so as to boost economic growth and reduce poverty. External debt is a major source of public receipts and financing capital accumulation in any economy. It is a medium used by countries to bridge their deficits and carry out economic projects that are able to increase the standard of living of the citizenry and promote sustainable growth and development.

In the case of foreign debt, the results confirm that the impact of foreign debt on economic growth becomes negative and significant in the presence of systemic banking crises in LI countries whereas, the relationship remains positive and significant in the LMI and UMI however, the magnitude of the relationship is drop down. Results also confirm the impact of foreign debt on economic growth becomes negative and significant in the presence of systemic banking crises in LI and LMI countries whereas, the relationship remains positive and significant in the UMI countries however, the magnitude of the relationship is drop down. These findings conclude that the banking and currency crisis are harmful for the relationship of external debt and economic growth in all income level countries. Debt service payments create a lot of problems for countries, especially the developing nation's reason being that a debt is actually serviced for more than the amount it was acquired and this slows down the growth process in such nations. Daud, Ahmad, and Azman-Saini (2013) asserted that at low levels debt has positive effects on growth but above particular points or thresholds accumulated debt begins to have a negative impact on growth. Furthermore, the high debt service payments shift spending away from health, educational and other social sectors.

4.10 Summary of Chapter

In this chapter, we present the results of empirical estimations and further discuss these results in the theoretical and conceptual context. Results of unit root estimation prove that there is no problem of unit root in our considered variables and we can further use these variables for the long run estimations. Results of Pedroni and Kao cointegration method indicate the rejection of null hypothesis of no cointegration in the favor of valid

long run cointegration for the all income level countries. Results of long run analysis indicate the negative and significant influence of systemic banking and currency crisis in LI, LMI, UMI and HI countries. These findings conclude that the systemic banking crisis and currency crisis are harmful for the economic growth for all income level countries. It is concluded that the banking crisis most affects the low income countries whereas high income countries least affect by the banking crisis. Furthermore, it is also concluded that the currency crisis most affects the upper middle income countries whereas, low income countries least affect by currency crisis. Results also indicate the positive and significant impact of all four types of FCI on economic growth in all income level countries except, remittances in low income countries and foreign debt in lower middle income. These two results show the negative impact on economic growth. These findings conclude that the banking and currency crisis are harmful for the relationship of foreign capital inflows and economic growth in all income level countries.



CHAPTER FIVE

SUMMARY OF MAJOR FINDINGS, CONCLUSION AND POLICY IMPLICATIONS

5.1 Introduction

The chapter presents summary of major findings, conclusion, policy implication and recommendation for future study. In the summary and conclusion section, we briefly discuss the need, objective, contribution, sample size and results of this study. Similarly, the policy implication and limitation of the study are also presented. Recommendation for future research and conclusion are equally made.

5.2 Summary of Major Findings & Conclusion

Foreign capital inflows play a significant role in the economic growth of both developing and developed countries. Foreign capital has also been considered to be a key element in the process of economic globalization and integration of the world economy. The flows of capital have been welcomed, to complement domestic financial resources, as a development catalyst. The resource deficient economies relied heavily on foreign capital to achieve the objective of higher economic growth. In the last two decades, the frequent occurrence of financial crises around the world, has awakened the debate about the causes, consequences, impact and aftershocks of these crises. These sorts of financial crises are majorly occurring because of systemic banking crisis and currency crisis. These crises significantly influence the relationship between FCI and economic growth. There are very few studies have been done which analyze the impact of financial crisis on the FCI. The movement of FCI is a matter of different income level

countries and it is generally moved from high and upper middle income countries to lower middle and low income countries.

The objective of this study is to identify the impact of foreign direct investment, foreign debt, workers' remittances and exports of goods and services on economic growth in high, upper middle, lower middle and low income countries. Furthermore, the more unique contribution of this study to analyze the impact of foreign capital inflows on economic growth of different income level countries in the presence of currency and banking crises. To attain the objective of this research we collect the panel data of 96 countries and group them on the basis of different income levels. The final sample of this study consists of 10 low income countries, 23 lower middle income countries, 30 upper middle income countries and 33 high income countries. We employed fixed effect & random effect model to judge the desired relationship among variables. Fully modified ordinary least squares (FMOLS) has also been used to ensure the robustness of initial results.

Results indicate the negative and significant influence of systemic banking and currency crisis in LI, LMI, UMI and HI countries. These findings conclude that the systemic banking crisis and currency crisis are harmful for the economic growth for all income level countries. It is concluded that the banking crisis most affects the low income countries whereas high income countries least affect by the banking crisis. Furthermore, it is also concluded that the currency crisis most affects the upper middle income countries whereas, low income countries least affect by currency crisis. Results also

indicate the positive and significant impact of all four types of FCI on economic growth in all income level countries except, remittances in low income countries and foreign debt in lower middle income. These two results show the negative impact on economic growth.

In the case of FDI, the results confirm that the impact of foreign direct investment on economic growth becomes negative and significant in the presence of systemic banking crises in LI, LMI and HI countries whereas, the relationship remains positive and significant in the UMI however, the magnitude of the relationship is drop down. Results also confirm the impact of foreign direct investment on economic growth remain positive and significant in the presence of currency crises. However, the magnitude of relationship is significantly drop down in all income level countries. These findings conclude that the banking and currency crisis are harmful for the relationship of foreign direct investment and economic growth in all income level countries.

In the case of exports of goods and services, the results confirm that the impact of exports of goods and services for economic growth becomes negative and significant in the presence of systemic banking crises in LI, LMI and HI countries whereas, the relationship remains positive and significant in the UMI however, the magnitude of the relationship is drop down. Results also confirm the impact of exports on economic growth remain positive and significant in the presence of currency crises. However, the magnitude of relationship is significantly drop down in all income level countries. These

findings conclude that the banking and currency crisis are harmful for the relationship of exports of goods and services and economic growth in all income level countries.

In the case of workers' remittances, the results confirm that the impact of remittances on economic growth becomes negative and significant in the presence of systemic banking crises in LI, LMI and HI countries whereas, the relationship remains positive and significant in the UMI however, the magnitude of the relationship is drop down. Results also confirm the impact of remittances on economic growth remain positive and significant in the presence of currency crises. However, the magnitude of relationship is significantly drop down in all income level countries. These findings conclude that the banking and currency crisis are harmful for the relationship of remittances and economic growth in all income level countries.

In the case of foreign debt, the results confirm that the impact of foreign debt on economic growth becomes negative and significant in the presence of systemic banking crises in LI countries whereas, the relationship remains positive and significant in the LMI and UMI however, the magnitude of the relationship is drop down. Results also confirm the impact of foreign debt on economic growth becomes negative and significant in the presence of systemic banking crises in LI and LMI countries whereas, the relationship remains positive and significant in the UMI countries however, the magnitude of the relationship is drop down. These findings conclude that the banking and currency crisis are harmful for the relationship of external debt and economic growth in all income level countries.

5.3 Policy Implications

Having established that all four types of foreign capital inflows are positively associated with economic growth and systemic banking crisis and currency are negatively associated with economic growth in all income level countries. Furthermore, the findings conclude that the banking and currency crisis are harmful for the relationship of FCI and economic growth in all income level countries. We recommend the following policy implications:

The results suggest that the exports of the country have significant positive impact on economic growth. Moreover, the banking and systemic crisis hurt the relationship between EXP and EG. It is recommended that the country can improve the economic growth at the time of financial crisis by diversifying their trade in terms of products and partners, both. They should implement the expansionary monetary policies and should have multilateral organizations that provide them funding at the time of economic shocks. In addition to this, to avert the financial crisis in the future, the economy should focus on achieving the optimal macro-economic policies. The foremost important policy is to improve the financial and trade integration. This can be done by signing the bilateral trade contracts, bilateral free trade contracts with the rest of the countries in the world. Moreover, the trade integration should also be encouraged at the provincial level as this will strengthen the local markets. The improved financial integration increases the economy attractiveness and results in FDI inflows.

The main problem for any economy is, in what manner the export should be improved which would result in the growth expansion. From the policy view, the economies

should focus on liberal trade policies in order to make strong relationships with other economies. Along with that, the country should also focus on efficient production of the domestic industries because the maximum benefit from exports can only be gained if the industries perform well. The industries that do not perform well should be eliminated by using the one-sided trade liberalization measures as this will help to minimize the trade risks.

The country should also focus on technological improvement to match the international quality requirement and to meet the high export goals. The investment on supply-side policies such as education and infrastructure should also be encouraged as they have the direct impact on exports. Moreover, the stable exchange rate policies should also be implemented because stable prices help the export expansion. Another way in which the export can be improved is allocation of resources on the basis of comparative advantage and achieving economies of scale because this lowers down the cost of export goods and make it more competitive in other economies, thus, enhancing the economic growth.

The results suggest that the FDI inflow of the country has significant positive impact on economic growth. Moreover, the banking and systemic crisis hurt the relationship between FDI and EG. It is recommended that at the time of crisis, government should play the role to minimize the negative impact of crisis by acting as a stabilizer for the foreign investors. The multinational corporations (MNCs) work in both countries (home and host) so they share the economic shocks. The FDI can be encouraged in the economy by introducing the financial reforms and improving the domestic financial

sector. The country's domestic performance should be emphasized because this not only improves the MNC performance, but it will also allow the economy to enjoy the maximum benefits from FDI inflows.

The policy makers should encourage the FDI by establishing those policies that improve the local firm access to technology, finance, inputs, encourages them to establish linkages. Moreover, the country should attract more FDI by giving attractive fiscal incentives and protected environment in order to generate income, employment and enhance economic growth. The countries should relax the regularity restrictions on capital flows in order to enjoy the benefit from capital inflows. Economic policies that stimulate the capital flows should be implemented as they increase the FDI effect on economic growth. To enjoy the positive effect of FDI on economic growth the economy should focus on a sustainable FDI strategy which focuses on quality and quantity both. They should implement those policies the boost human capital and infrastructure development as they both influence economic growth in an effective manner.

The results suggest that the flow of workers' remittances in the country has significant positive impact on economic growth. Moreover, the banking and systemic crisis hurt the relationship between REM and EG. Worker remittances are considered as a boon to the countries. It has a positive association with the economic growth and acts a stabilizer during the financial crisis. To ensure the effective inflows of the remittance the government should encourage that remittance should be transferred through formal channels, this can be done by giving cost effective financial services to the remitter,

linking the remittance transfer with mobile networks and banks that charge low prices. The remittance transfer through formal channels increases the foreign currency reserves and at the time of financial crisis, these reserves can be used to maintain the macroeconomic stability, to minimize the effect of negative shocks and help to boost the economic growth. Moreover, during the financial crisis, it also lessens credit constraints faced by the country.

The government authorities should also use the remittance inflows in a productive manner which results in creating employment opportunities. For this, the government should encourage tax exempted projects, establish new business in different sectors, and give incentives on investment, as this will encourage the remitter to invest the money and results in increased remittance inflows. Moreover, the authorities should develop policies that encourage international migration and use the remittances in promoting domestic production.

During the financial crisis, the remittance acts as a cushion in minimizing the worst effects. To maintain the economic growth at the financial crisis the economies should involve in global integration as it is one of the beneficial path to follow. The countries should also consider the wealth of the overseas diaspora as one of the potential sources of capital and it should be increased by issuing financial instruments such as diaspora bonds as this is one of the sources through which the remittances can be secure for the future.

The results suggest that the flow of foreign debt in the country has significant positive impact on economic growth. Moreover, the banking and systemic crisis hurt the relationship between EXD and EG. Countries adopt an external financing to ensure the sustainable economic growth as domestic saving alone is not sufficient for the development. So, the policy makers and the governments should be aware with the importance of the effective debt management and its role in the enhancement of growth. The authorities should use the efficient techniques in the acquisition and deployment of the debt. They should closely monitor the application of the external borrowing and confirms that they are used in an efficient and effective manner. The continuous monitoring should be done to affirm that the optimal debt does not exceed the benchmark. Furthermore, when the government faces the debt, deficit and plan to go for external borrowing they should do an analysis and ensure that this borrowing will not result in debt overhang.

If the countries found the overhang situation the government prior focus should be its reduction. It can be done through debt rescheduling, debt buy backs, debt restructuring or write-off. This will also help the countries to maintain the internationally accepted debt ratio level, i.e., 45% of GDP. The government should make those fiscal policies which endorses debt sustainability because debt is helpful for the growth of the economy if does not exceed the optimum level. Moreover, the government expenditure should also be reduced as this improve the debt situation.

The excessive dependency on external debt brings in negative results so the effective external debt management and maintaining optimum level is of key importance. To achieve this, the external borrowing should be used in the industrial sector of the economies because it directly increases the production and ultimately results in the economic growth. Moreover, the organizations should use the external debt in export oriented areas and in the encouragement of financial, trade, since during the financial crisis, the diversification in financial trade helps to generate the export proceed which is the prime source in the repayment of external debts. It is recommended to the governments that during the financial crisis, they should focus on the debt transformation rates in order to promote economic growth by means of foreign capital.

The foreign exchange reserve is of crucial importance in order to pay external borrowing so the good relationship with the investors should be encouraged by promoting trade openness and trade liberalization. Moreover, the government should ensure political stability in order to gain the confidence of both local and foreign investors. This will help the countries to reduce their reliance on external debt. The stable environment also increases the Foreign Direct Investment (FDI) inflows and through FDI the external borrowing can be minimized. So, the policy makers should establish those policies that encourage FDI.

5.4 Limitations of the Study

This study focuses primarily on the impact of foreign capital inflows on economic growth and influence of systemic banking crisis and currency crisis on the relationship

of foreign capital inflows and economic growth in different income level countries. The major issue we faced is about the non-availability of historical data. This study provides the several contributions to the existing literature, whereas, still some limitations exist in this study. We use four different flows of FCI i.e., exports, foreign debt, remittances and FDI. However, the variables of foreign portfolio investment and grants are not used in this study because of non-availability of enough data for all income level countries. The study was limited to the period due to the availability of data on our variables of interest. The sample size of our study is relatively limited from 1995 to 2013, only 14 annual observations for each cross section. Furthermore, we only consider those countries which have the proper data of all types of foreign capital inflows to ensure the homogeneity of sample and results. Other than having data for only a few years there were missing data for certain countries.

In this research, we only focus on the relationship of different income level countries. The future researches may be conducted on the sample of different regions, like Asia, Africa and Europe. The future researches may also be conducted on the comparative basis between the regions. The future researches should be focused on the time series analysis on the cases of specific country which discuss more specific results and discussion of the separate country. The non-availability of enough literature on the topic of influence of systemic banking and currency crisis in the relationship and economic growth is also a limitation of this study.

5.5 Recommendations for Future Research

Given the limitations of the present study, we recommend that future research should consider the issues highlighted in this section. In this research, we only focus on the relationship of different income level countries. The future researches may be conducted on the sample of different regions, like Asia, Africa and Europe. The future researches may also be conducted on the comparative basis between the regions. The future researchers may also conduct research on the basis of different other homogenous groups, i.e. developed economies, developing economies, emerging economies, G-7 countries, BRICS countries. The future researches should be focused on the time series analysis on the cases of specific country which discuss more specific results and discussion of the separate country.

Furthermore, this study is based on only revenue generation based foreign capital inflows i.e., exports, foreign debt, remittances and FDI. The future researches may be conducted on those foreign capital inflows which come into the country to provide support i.e. international government grants and foreign aid. Future researches may be conducted on the disaggregate level or a sectorial basis of FDI and export in an economy.

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