Foreign Assistance, Savings and Economic Growth: An Empirical Investigation of Selected Asian Countries

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2017

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Dissertation submitted

in partial fulfillment of the requirements of
MS (Economics)
IIIE, IIU Islamabad, Pakistan
2017

APPROVAL SHEET

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بسم الله الرحمن الرحيم

In the Name of Allah, the Most Gracious, the Most Merciful

DEDICATED

TO

MY LOVING HUSBAND, PARENTS

AND

SIBLINGS

DECLARATION

I hereby declare that the work presented in the following dissertation is my own effort and that the thesis is my own composition. No part of the thesis has been previously presented for any other degree.

Ayesha Javaid Cheema

ACKNOWLEDGEMENTS

*All praise to **Almighty ALLAH**, the most beneficent, the most merciful, who bestowed on me the potential, health and ability to execute this research task. Countless salutations upon the **Holy Prophet Hazrat Muhammad** (Sallallaho Allaihe Waalahe Wassalum), the city of knowledge for enlightening with the essence of faith in Allah and guiding the mankind, the true path of life.*

*I feel highly privileged in taking opportunity to express my deepest gratitude to my esteemed supervisor **Dr. Mirajul Haq**, Department of Economics, International Institute of Islamic Economics, International Islamic University, Islamabad for his patience, motivation, scholastic guidance and valuable suggestions throughout the study and presentation of this manuscript. I am thankful to him for his inspiration, reassurance and counseling from time to time.*

*I am thankful to **Dr. Muhammad Arshad Khan** and **Dr. Babar Hussain** for their constructive criticism and valuable comments, which helped me considerably in final revision.*

*I am grateful to my friends, particularly **Annum Hussain, Aaliya Jabeen, Maira Shafi, Rukhsana Naz, Mehwish Naseem and Fatima Nasir** for their kind cooperation and assistance in various ways regarding our research work and for their moral support and encouragement.*

*Last but not the least all goes to my **mother, father, husband, siblings and in-laws** who deserve special mention for their inseparable support and prayers throughout my life. It wouldn't have been this bearable if we didn't have these in my life. Thank you for your unconditional support with my studies. Thank you for giving me a chance to prove and improve myself through all walks of our life.*

Finally, I would like to thank everybody who was important to the successful completion of thesis, as well as expressing my apology that I could not mention personally one by one.

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Abstract

The role of foreign assistance in enhancing economic growth has been an issue of considerable disagreement. The main objective is to contribute a better understanding of foreign assistance and economic growth relationship in 17 lower income and highly indebted Asian countries from 1990-2013. The present study examines the impact of foreign assistance on economic growth through the channel of savings. The study also examines whether foreign assistance works as a complement of savings. In this study, an empirical model is estimated using the GMM estimation technique. The findings indicate that foreign assistance has positive impact on economic growth in selected Asian countries and foreign assistance and savings influence each other positively. Which means that foreign assistance works as complement of savings and both variables helps to increase the economic growth. Based on these findings, a set of policy implications has been suggested. Firstly, there is a need to implement appropriate policy measures in order to achieve positive impact of foreign assistance on economic growth through Savings/Investment. Secondly, as findings revealed that foreign assistance and savings are complementing each other, developing countries should also increase the level of national savings so that country start relying on internal sectors through proper allocation of resources. Lastly, there is a need to design trade liberalization policies to enhance and sustain economic growth.

Chapter 1

Introduction

1.1. Background of the Study

Foreign aid (FA), external debt (ED), and worker's remittances are the key external sources that explains growth and development in developing countries. As most of the developing countries usually have scarce resources hence facing fiscal constraints. Lack of domestic capital compels the government to look for additional financial resources to meet the growth and development goals. Foreign assistance (FA and ED) therefore becomes one potential external capital that is expected to boost economic growth significantly in developing countries. Soludo (2003) argued that borrowing have both macroeconomic and microeconomic (project specific) reasons for borrowing countries. As most of the developing countries are facing three types of gaps namely (i) saving-investment gap, (ii) exports imports gap (trade deficit) and (iii) public revenue and expenditure gap (fiscal gap). Therefore, on macroeconomic perspective the key objective of foreign assistance is to fill these gaps. Papanek (1973) and Rajan and Subramanian (2008) hypothesized that FA not only play a role to fill two gaps as indicated by two gap model, but also accumulates physical and human capital stocks.

FA is a voluntary transfer of resources under the various categories from one country to another, given by individuals, private organizations, or governments in order to give financial support for the recipient country's economic growth Khan and Ahmed (2007). The debate on the relationship between FA and economic growth has been greatly highlighted for decades, Although economic theories are quite consistently accept the role of FA in spurring economic growth potentially, the

empirical studies are still away from conscience of the constructive effects of FA on the economic growth. For instance, studies that have pessimistic view Lensink and White (2001), Hansen (2002), Chauvet and Guillaumont (2004) , Khan and Ahmed (2007) and Mitra and Hossain (2013) among other found that FA hurts domestic economy as it expands public sector. Whereas in developing countries in the absence of sound institutions public sector is less efficient as compare to private one, hence provision of FA increases corruption and distorts income distribution in the FA receiving countries. In addition, the pessimistic view holds the claim that the factors such as government intervention and economic policies results in adverse association between economic growth and FA. For example, Burnside and Dollar (2004a) explained that FA facilitates the economic growth conditionally in existence of a good policy surroundings. On the contrary, the optimistic view; Dowling & Hiemenz (1983), Durbarry et al, (1998), Burnside & Dollar (2000), Moreira (2005), Mohey-ud-din (2005) and Javid and Qayyum (2011) argued that FA is always good for GDP growth of aid recipient countries. Most of these studies explained their optimistic view through the filling of saving - investment gap of FA in expanding countries. While some studies found that FA and economic growth has no significant relationship and concludes that FA cannot buy economic growth. However, it should be noted that effectiveness of FA on economic growth is diverse across developing countries.

Another important component of foreign assistance is ED, which is the money borrowed from international financial institutions. In second half of 1990s, the increased reliance of developing countries on ED has received great attention from most of the policy makers. Cunningham (1993) argues that ED is more helpful for the countries that are less indebted presently as compare to more indebted countries. For instance, Pattillo et al. (2002) argued that ED is considered as one of the significant dynamics which are contributing to limit the growth of poor or developing countries.

Similarly, Hansen (2002) discussed that ED perceived to have negative influence on GDP growth of nation as they put excessive burden on a country`s economic system. This is so because countries receive large loans from different financial institutions of developed world. For which they pay high interest rates. The repayment of such loans definitely decrease the performance of recipient countries. According to literature, the non-linear impression of ED occur through investment channel Pattillo et al. (2002). Audu (2004) indicates that debt servicing has now become a huge burden for the recipient countries because of which countries are falling on the fallacious side of debt-laffer curve, with ED mounting economic growth and investment. Two-gap model provides a structure, which shows that an economy's GDP growth is the function of investment. However, Oloyede (2002) argued that in developing countries investment through internal savings is not enough to ensure the development of economy, therefore countries taking loan from external resources.

As empirical indications on the parallel movement of foreign assistance and pace of economic growth is yet inconclusive. The inconclusiveness of empirical literature on foreign assistance (both FA and ED) and economic growth relationship motivates us to thoroughly investigate this relationship empirically to gain a greater knowledge of the complex issue and arrive at logical conclusion. This study intends to overcome the underlying ambiguities on this relationship in selected countries of Asia as more literature gap is observed here and the countries in Asia have been one of the destinations of foreign assistance. Also, it hosts more than 4.4 billion people. Basnet (2013). During the periods 1981-1990 and 1991-2000, the average growth rates of Asia have been higher while foreign assistance has become a main driver in promoting economic and social development. Botchwey (2000) discussed that the net flows of ODA in real terms has been

significant for the Asia region.[1] According to the IMF (2016) report, ODA per capita received by the Asian region was around $3 million, this value has climbed to around $50 million in 2006 and by 2016 it reaches approximately to $179.5 million whereas the growth remains strong and the regional economy expands by 5.3 percent in 2016.[2] To sum, it can be said that like other developing countries of the world, lower and lower middle-income countries of Asia has insufficient domestic resources to fulfill the rising expenditures. In order to increase and sustain long run economic growth, these countries needs foreign assistance from some developed countries and international loan and donor agencies. Vietnam and Bangladesh are amongst the top ten recipients of FA during the fiscal year 2012.[3] In this association the empirical analysis have been carried out for 17 highly indebted lower and lower middle income countries of Asia.[4]

1.2. Significance of the Study

As per existing literature including some most recent studies, the foreign assistance-growth relationship is vague, which stimulate us to do further research on the effect of foreign assistance (FA and ED) on economic growth. In addition, keeping in view the saving investment gap model we have introduced two interaction terms and checked the substitutability and complementarities of foreign assistance and domestic saving. It is an attractive research exercise as it analyze the relationship between foreign assistance and economic growth through saving channel

[1] Botchwey, K. (2000). "Financing for Development: Current Trends and Issues for the Future", paper presented to the United Nations Conference on Trade and Development, Bangkok, 12 February.

[2] http://www.imf.org

[3] http://data.worldbank.org/indicator/DT.ODA.ALLD.CD

[4] Selected lower income and lower-middle income countries of Asia are Armenia, Bangladesh, Bhutan, Cambodia, Georgia, India, Indonesia, Kyrgyz Republic, Lao PDR, Mongolia, Nepal, Pakistan, Philippines, Sri-Lanka, Tajikistan, Ukraine, and Vietnam.

1.3. Research Objectives

The study targets to widen literature on the following;

1. *To explore the effect of FA and ED on economic growth of selected Asian countries*
2. *To explore the substitutability and complementarities of foreign assistance and savings*

1.4. Research Queries

Keeping in view the objectives of the study, following queries have been examined.

1. *Is foreign assistance positively affect economic growth in selected Asian countries?*
2. *Is foreign assistance and saving behaves as complements?*

1.5. Research Hypotheses

To accomplish objectives of the study, the following null hypotheses have been empirically tested.

Hypothesis-I:

H_0: Foreign assistance effects economic growth of the sample countries positively.

Hypothesis-II:

H_0: Foreign assistance behaves as complements of savings in the sample countries.

1.6. Organization of the Study

The study has been spanned within the framework of six chapters. Chapter 1 covers a brief introduction including the hypotheses, background the targeted objectives, and Chapter 2 encompasses the related theoretical and empirical literature. The Chapter 3 provides comprehensive overview of foreign assistance and economic growth in the sampled countries.

Chapter 4 comprises of methodology for theoretical framework, the data sources, econometric model and construction of variables. Chapter 5 presents conclusive discussion and empirical results. While Chapter 6 does a summarized conclusion for the suggestions and recommendations of related policies.

Chapter 2

Literature Review

Numerous studies have examined the channels and mechanism by which foreign assistance affects the growth of economy. However such studies show uncertain association between FA, ED and the growth of economy and considered as one of the most directionless issue at both theoretical and empirical level. Therefore, literature review is divided in to two sections; theoretical literature and empirical literature respectively.

2.1 Theoretical Literature on Foreign Assistance and Economic Growth

The effectiveness of foreign assistance on economic growth of developing economies have been topic of debate since years. Harrod (1939) and Domar (1946) model emphasized the role of savings and investment to determine the economic growth of developing countries and they also stressed that if domestic savings are not enough to fulfill the investment requirements than countries will start relying on foreign assistance. As, saving-investment gap was considered as the huge issue for developing economies Moreira (2005). Chenery and Strout (1966) supported Harrod-Domar model and hence proposed two gap theory and suggested that apart from saving-investment gap developing countries also face foreign exchange gap. So, the foreign assistance received by any economy is utilized to fill these two gaps. It was further added that, developing countries face another gap that is scarcity of technological abilities for efficient production at national level. Hence it can be concluded that developing countries have huge reliance on external assistance for fulfilling these economic needs Burke and Ahmadi (2006).

Bacha (1990) and Taylor (1992) proposed three gap model and added that developing countries actually faces three gaps. That are; (i) saving-investment gap, (ii) fiscal gap and (iii) trade gap. That is why developing countries have less space for economic development and growth. So, to fulfill all these gaps foreign assistance is considered as important tool. The growth models were highly criticized that these models consider capital formation as only source of economic development. However, this is not the case since these models defined economic growth as a function of many other factors. On the other hand, Griffin (1970) argued that foreign assistance cannot guarantee economic growth even it distorts the level of domestic saving and in turn, the country's reliance on external sector increases.

2.2 Empirical literature on Foreign Assistance and Economic Growth

Empirical literature on effectiveness of foreign assistance on economic growth is divided in to four sections. First section includes the studies which concludes that FA and economic growth are positively related with each other. While second section includes the studies which shows FA and economic growth possess negative relationship. Third section includes the studies which concludes that FA has no significant impact on economic growth. Fourth and last section covers the studies which explains ED to economic growth relationship.

2.2.1 Foreign Aid – Economic Growth Positive Relationship

The studies included in this section concludes that FA always increases economic growth. Among these the one comprehensive study has been carried out by Papanek (1973) carried out the research to find out the impact of FA, savings at domestic level, private investment by nationals residing abroad and other inflows on GDP growth. Study concludes positive connectivity amongst savings, FA inflows and GDP growth but FA has greater effect than all other variables under consideration.

It was also observed that GDP is not related with exports or education etc. While savings of the country are highly dependent on level of exports and income. Boone (1996) examined the effect of FA on the growth of political regimes and economy. To meet the objective Boone (1996) divided the political regimes in to three type's namely egalitarian, elitist, and laissez faire. The study used data set of 96 countries. According to study findings, elitist regimes clarify the association between the growth of economy and the FA in the optimum way. The study came up with the conclusion that FA is not effective in poverty reduction, however it helps in the increasing of the size of the economy. Durbarry et al. (1998) investigated FA to economic growth relationship with and without policy environment. The study also compares the panel data and cross-section data techniques to overcome the prevailing ambiguities in FA and economic growth relationship. By considering data set over the period 1970-1993 for 68 developing countries study concluded that, in most of these developing countries, FA has positive and significant impact on growth of economy. While it's mass has huge reliance on macroeconomic policy. Another comprehensive work on FA to economic growth relationship was executed by Burnside and Dollar (2000). This study encouraged aid inflows in the nations in existence of good policies while in presence of poor policies study concluded that FA has no positive impact on the economic growth. Burnside and Dollar (2000) reinvestigated the FA to the growth of economy in existence of good policies by taking into account a new data set. The study concluded that FA is highly effective to economic growth in presence of the recipient country's effective and favorable policy environment. These findings of Burnside and Dollar (2000) were opposed by a number of studies. For instance, Easterly et al., (2003) challenged Burnside and Dollar (2000). They used a data set over the period 1970-1997 instead of 1990-1993. It was concluded that FA is, no doubt, beneficial in good policy domain but it was argued that the conclusion of Burnside and Dollar (2000) are not supportive to

the utilization of additional data and findings are highly dependent on time periods, data context, and type of FA. Burnside and Dollar (2004a) replied to Easterly et al., (2003)'s challenge and after explaining the basics of his study again supported the supposition that FA directed to countries with good policy environment will generate high economic growth. Dalgaard et al., (2004) examined FA to economic growth relationship theoretically and empirically. It was also examined that what is the role of policies on the effectiveness of aid inflows. By using OLS model and data over the time period 1970-1993, it was concluded that FA results in high economic growth. It was suggested that effectiveness of aid is highly dependent on its allocation, climatic condition and policy environment. So, there is a need to re-investigate the rule proposed by Collier and Dollar (2002) for aid allocation. Hansen and Tarp (2001) examined FA and economic growth relationship for European countries. Study supported the hypothesis that FA in all its forms increase economic growth via investment. It was further observed that the connectivity of FA is largely dependent upon the variable selection criteria. Ram (2004) investigated whether effectiveness of aid depend on policy environment or not. This study was conducted for developing countries. It was concluded that FA has positive impact on economic growth while aid effectiveness is independent of policy environment. Also little evidence was found that redirecting the FA towards the countries with good policies will increase aid effectiveness and growth on the whole. Sachs et al., (2004) investigated FA to economic growth relationship and its impact on poverty reduction. Findings suggest that FA and economic growth are positively related with each other. Also, there is a need to increase FA to overcome the poverty trap. Moreira (2005) examined the contribution of FA to the growth in developing countries by considering reduced form of quadratic regression model proposed by Papenek (1973). His findings suggested that short run impact of FA on growth is positive and lower than its long run impact and that is why time lags in aid-growth cannot be

ignored. Karras (2006) used group data of 71 developing countries and inspected the relationship between FA and the long run economic growth. The outcomes indicate that in the long run, there is considerable positive relationship between the economic growth and FA. Also it was suggested that aid effectiveness depends on its allocation. So, there is a need to work on aid allocation. Shields (2007) by considering 119 countries individually, investigated the impact of FA on level of savings. Findings suggest that in most of the countries aid is positively related to saving level, hence, investment of the nation. Economides et al. (2008) studied the impacts of FA on the economic growth and whether FA twist the incentives of recipient countries or hurt the economy on the whole. 75 aid-recipient countries were considered and it was accomplished that there subsist a direct, positive and considerable relationship between the economic growth and FA. FA is more effective in countries with large public sector. Rajan and Subramanian (2008) explored the FA and economic growth relationship for panel and cross-sectional data. By using OLS, study concluded a positive relationship subsist between economic growth and FA. Study also concluded no such evidence is found that effectiveness of aid is dependent on form of FA, policy variable, institutional quality or geography. It was explained that the type of aid, whether good or bad, depends on four things. That are (i) why donor country is granting aid to recipient country? (ii) What is the type of donor country? (iii) When the country is granting aid? (iv) What are the uses of aid to recipient country? Dietrich and Wright (2012) investigated that how aid affect democratic transitions in investment perspective and how aid is helpful for political reforms. For this purpose, FA was divided into different components like economic aid, democracy aid and governance aid. Study concluded that democracy and governance aid have positive effect on democratic condition of nations in the presence of FA. While nothing exists between economic aid and democracy aid.

In the case of Africa, many studies have been carried out on aid effectiveness and many of them concludes that FA increases economic growth. Addison et al., (2005) reached the conclusion that aid is highly effective in African nations in both economic growth acceleration and poverty reduction. Gomanee et al., (2005) by using pooled panel data set from 1970-1997 for 25 Sub-Saharan African countries investigated the FA to economic growth relationship via investment. Findings suggest that there is positive effect of FA on economic growth. In addition, they found that the poor growth of Africa should not be attributed to effectiveness of FA. Loxley and Sackey (2008) used data set of 40 African nations and finds that FA results in high-income growth through savings and investment. They also highlighted the impact of foreign grants and concluded that grants are twice effective than FA. Uneze (2010) conducted the study and find out the impact of FA on investment in West Africa having divide FA into bilateral aid and multilateral aid. According to the findings multilateral aid positively affect the savings and investment while the relationship between savings and FA is uncertain if bilateral aid is considered. Njoupouognigni (2010) conducted the study to investigate the relationship between foreign direct investment (FDI), FA and the growth of economics. Study considered panel data from 1980-2007 for 36 Sub-Saharan African countries. It was concluded that there is a constructive impact of FA and FDI on the economic growth but FDI has a more positive effect on the growth as compare to FA. It was further suggested that there is a need to focus on internal industry rather than the reliance on external sector. Juselius et al., (2014) investigated long run effect of FA on macroeconomic variables by considering 26 sub-Saharan African countries. Data set from 1960-2007 was considered and by using VAR model it was found that in long term FA affects the growth of economy positively. It was also concluded that there is little evidence that FA is harmful for economy.

There are number of empirical studies, which consider Asian and African nations together to compare effectiveness of FA and its volatility in both regions. Irandoust and Ericsson (2005) analyzed the link amongst FA, savings at domestic level, and growth of the economy. This research was organized for different African countries. Having used co-integration analysis, the study found that FA and savings enhance growth for all sample countries. Ekanayake and Chatrna (2010) conducted their study using data set of 85 developing countries. The intention of the study was to measure FA productivity in developing nations. The study discovered that FA results in expansion of economic growth in African countries only. Christofferson (2010) used substantive approach pioneered by Amartya Sen for the measurement of aid effectiveness and reached the conclusion that FA is highly effective in Sub-Saharan Africa and Asia. It leads to high increase in primary school enrollment in both regions.

Recently a number of studies analyzed growth and poverty impacts of foreign assistance in case of Asian countries. Hong (2004) reveals that from 2000-2009 the aid inflows in Cambodia and Vietnam are much higher than Lao PDR but aid per recipient in Lao PDR are highest among all. Further, the study concluded that FA inflows have adverse effect on the growth of Lao PDR's economy. While it has positive impact on Vietnam and no significant impact on growth of Cambodia's economy. Asteriou (2009) investigated aid-growth relationship in long run for five Asian countries including Pakistan. The findings of this study were contrary to the study of Burke and Ahmadi-Esfahani (2006). The study conclusions advocate that FA inflows results in high economic growth. Same results were found by Kaosar and Idrees (2010) . It was further concluded that the value of FA is dependent of the economic policies designed for the purpose of development. Chowdhury and Das (2011) also conducted their study in South Asia to examine if there is any association or linkage amongst FA and per capita real GDP. Findings of study supports

FA effectiveness hypothesis and concludes that in long term FA and real per capita GDP affect each other positively. Arazmuradov (2012) investigated the relationship between FA and FDI and the impact of both on economies of Central Asia. Study concluded that both FA and FDI are positively associated with each other. The amount of FA found more in Kyrgyz Republic and Tajikistan as these countries have low GDP growth rates. Basnet (2013) investigated the effect of South Asia's FA inflows on its economic growth through savings and declares significant and positive impact of on economic growth. Same conclusion was drawn by Austria (2009).

Feeny (2005) conducted a case study for Papua New Guninea (PNG). It's a developing country in South Pacific. The research intended to investigate the effectiveness of FA and to investigate whether this effectiveness depends on policy environment, level of governance or World Bank structural adjustment program. Study was performed using ARDL approach for data set over the period 1965-1999 and concludes that FA is highly effective on the economic growth with or without structural adjustment program but this impact is more in presence of structural adjustment program. Al-Khaldi (2008) investigated the trend and impact of FA in economic development in Jordan using a data set for the period 1990-2005. Based on regression analysis, it was concluded that FDI directly affect the development of economy and FA positively impact economic growth of the nation. Bhattarai (2009) conducted a case study to investigate FA and economic growth relationship in Nepal and found positive relationship between both of these variables. It was also explained that this relationship between FA and economic growth depends on level of savings and investment, inflation, political stability and economic stability. Hokmeng and Moolio (2015) argued that in FA taking countries, the purpose of FA is to increase the growth of economy. They conducted case study on Cambodia to investigate FA and economic growth relationship and found that aid flows are effectual in enhancement of the country's economic growth. Positive and

significant impact of FA on economic growth of Cambodia. Further, it was concluded that FA may result in inflation as well.

A number of studies have analyzed the effectiveness of FA on economic growth in Pakistan's economy. Mohey-ud-din (2005) on the same lines examined the impact of FA on GDP growth of Pakistan using data set over the period 1960-2002. In addition, the study examined the roles of fiscal and monetary policy in the economic development of Pakistan. The study concluded that FA helped to boost economic growth of Pakistan during the time period under consideration. On the other side research concludes that FA seemed to be a substitution for savings and has increased the debt burden from 1970-2002 and there is a need of good policy environment to achieve high economic development and to remove mismanagement of foreign resources in the country. Javid and Qayyum (2011) analyzed the effectiveness of FA on sustainable economic growth and investigated that whether FA works better in the presence of macro-economic policy or not. Keeping in view three motives of FA, they came up with the conclusion that FA and economic growth are positively related; however, it is conditional to different economic policies.

2.2.2 Foreign Aid-Economic Growth Negative Relationship

This section includes the studies which holds pessimistic view and claims that FA always decreases economic growth. For instance, Fry (1978) considered seven least developed Asian nations to test the effect of FA and ED on savings by country's nationals and concluded that significant and negative relationship exist between FA, debt and savings. Dolgaard and Hansen (2001) critically examined the economic growth regressions supported by Burnside and Dollar (2000). The study conclusions advocate that implication of policy results in high economic growth but on the other hand, this policy implication decrease the effectiveness of FA on GDP. It was also

concluded that the connection between FA and policy variable is highly dependent on data set and model specification. Lu and Ram (2001) conducted the study for 56 aid-recipient countries. The objective of study was to inquire FA to economic growth relationship and part of policies in effectiveness of FA. It was concluded that aid decrease economic growth for most of these developing countries. It was also concluded that policies has no significant effect on aid effectiveness. In some cases, negative relationship between aid effectiveness and policies was observed. Chauvet and Guillaumont (2004) investigated impact of FA on economic growth and poverty reduction and resulted on negative connection existing between FA and GDP growth. Chauvet and Guillaumont (2008) again investigated the influence of FA and its volatility on economic growth. Another research question that was investigated in the study is to check in which case aid volatility matters. The study also considered the effect of FA on income volatility and concluded that FA is effective in countries where it is stable; however, they observe dampening effect of income volatility. Gupta et al., (2003) considered data for 107 developing countries from 1970-2000 to investigate the response of aid inflows to total revenue. It was also investigated that whether composition of FA depends on its effectiveness or not. Study concluded that aggregate aid inflows and revenue are negatively related with each other. It was further concluded that loans have positive effect on revenues while grants have negative effect on revenue. There is a huge need to increase loans for the fulfillment of millennium development goals. Djankov et al., (2006) challenged the stance of Sachs et al., (2004) that FA helps overcoming the poverty trap. They investigated the economic growth-FA relationship for developing countries. By using OLS it was observed that there is negative impact of FA on economic growth. It also results in low investment and high government consumption. Hence, it was concluded that FA is not helpful in overcoming the poverty trap. Eris (2008) who revisited the aid-growth relationship. His results were in total

contradiction with Burnside and Dollar (2004)'s results. Findings of Eris (2008) recommended that aid flows are not effectual in enhancement of the country's economic growth whatever the policy environment is. Doucouliagos and Paldam (2008) analyzed the aid effectiveness on 108 aid receiving countries by using panel data over the time period 1960-1999. Few more explanatory variables were used in the study for comparison purpose. For Example, the impact of oil rents on political institutions. The study concluded that aid is basically a curse. In fact, it is a biggest curse than oil because foreign aid decrease the economic growth of nations manifold. It was suggested that there is a requirement to inspect the factors behind the adverse effects of FA on economic growth and political institutions of nations and what are the factors which influence FA to economic growth association. Minoiu and Reddy (2010) investigated the effect of FA on economic growth for developing countries in long term. They divided FA in to two types. One is development aid and other is non-development aid. Development aid can be defined as the aid which is used for developmental purposes while non-development aid is used for all other things. It was concluded that development aid promote economic growth in long term. Meanwhile the non-development aid reduce the growth of economics in all its forms.

There are number of empirical as well as theoretical studies, which consider Asia, Africa Asian and African nations together to compare effectiveness of FA and its volatility in both regions and many of them concludes that FA decreases economic growth. For instance, Clemens et al., (2004) used data sample of Sub- Saharan African countries and conducted study to examine the impact of FA on economic growth. FA was divided in to three parts that emergency aid, long impact aid means FA, which only effect in long period and short impact aid, which means aid which effect in short period. Study concluded that emergency aid has adverse effect on the economic growth. Long impact aid has no impact on economic growth. While the short impact aid affect the economic

growth positively. It was further concluded that the value of FA is independent of the institutional quality and income levels. Hong (2004) reveals that from 2000-2009 the aid inflows in Cambodia and Vietnam are much higher than Lao PDR but aid per recipient in Lao PDR are highest among all. Further, the study concluded that FA inflows have adverse effect on the growth of Lao PDR's economy. While it has positive impact on Vietnam and no significant impact on growth of Cambodia's economy. Ekanayake and Chatrna (2010) conducted their study using data set of 85 developing countries from Asia and Africa. The intention of the study was to measure FA productivity in developing nations. The study discovered that FA results in reduction of economic growth in Asia. Bhavan et al., (2010) conducted the individual country case study for five South Asian countries and investigated the growth effect of FA and its volatility. After classifying FA into three main categories, short term, long term, and humanitarian aid. Study concluded that gross aid has positive affiliation with economic growth while volatility of FA results in downfall of economic growth. Nowak-Lehmann et al., (2012) analyzes the effectiveness of FA on per capita income. Study concluded that inconsiderable negative correlation exists amongst FA and per capita income for countries with different income groups. It was further concluded that foreign aid and savings are negatively related with each other. Ferreira and Simoes (2013) investigated the FA-economic growth relationship. They also examined the factors, which influence this relationship in Sub-Saharan Africa and Asia. Disaggregated form of policy variables was considered in the research. Negative affect of FA on the economic growth was found and mixed results obtained for the quality of institutions, effect of the policy variables under consideration and advancement of finance.

Teboul and Moustier (2001) investigated the role of FA in promoting growth for South Mediterranean countries. Study considered panel data set from 1960-1996. Negative relationship

was observed between FA and economic growth. It was further concluded that effectiveness of FA depends on its provision, model specification and its volatility. It was suggested that aid inflows should not be volatile to make it more effective. Dollar and Levin (2006) investigated the effectiveness of FA on GDP growth in presence of sound institutions after Monterrey consensus held in Mexico 2002. This consensus concluded that FA is more effective when institutions of the country are sound and efficient. In this study, FA was further divided in to two parts multilateral aid and bilateral aid. It was concluded that from 1984-89, negative correlation was observed amongst GDP growth and both types of FA. From 2000-03, significant and positive relationship was observed between economic growth and multilateral aid while positive and insignificant relationship was observed in case of bilateral aid. It was also concluded that FA effectiveness has huge dependence on the institutional quality. Headey (2008) conducted the study to examine the effect of FA on GDP growth. FA has two sections multilateral aid and bilateral aid. Data set under consideration was from 1970 to 2001. Data set was divided in to two periods post-war and pre-war. The study concluded that multilateral aid has sizeable negative effect throughout the data while in case of bilateral aid, no significant relation between FA and economic growth was observed in postwar. Mitra and Hossain (2013) investigated aid-growth relationship for Philippines who is one of the largest recipients of FA. Results indicate adverse effect of FA on economic growth. Likewise Adams and Atsu (2014) performed a case study of Ghana to find out aid effectiveness. Findings suggested positive aid-growth relationship in short run while negative aid-growth relationship in long run. Also, findings of research indicates that financial depth and international trade have no significant impact on economic growth of Ghana.

Khan and Ahmed (2007) conducted the research to investigate whether FA is a blessing or a curse in case of Pakistan and the findings indicate that FA has negative but insignificant effect on

economic growth and it was suggested that domestic investment and inflow of FDI should be considered as the factors that influence the economic growth. Sami et al., (2012) investigates what could be the impact of FA and its volatility on economic growth specifically in Pakistan, and concluded that aid volatility is negatively affecting the economic growth of Pakistan. They also checked the causal relationship between the dependent variables and found uni-dimensional causality between foreign aid and GDP, FDI and FA and bi-dimensional causality between GDP and FDI.

2.2.3 Foreign Aid-Economic Growth Insignificant Relationship

The purpose of this section is to give a brief overview of literature which concludes that there is no significant impact of FA on economic growth. For instance, Islam (1992) conducted a case study of Bangladesh, which is one of the poorest nation of Asia and also one of the largest aid receiving country of world. The study intended to investigate the effect of FA and its various components on economic growth of Bangladesh. The data set under investigation is time series from 1972-1998. It was concluded that there is no significant link amongst FA and economic growth of Bangladesh while if we decompose FA into several components than it can be concluded that foreign loans are more effective than grants. Hansen (2002) also investigated the effect of FA on growth of economy and ED on economic growth relationships in cross country growth and investment opportunities. Hansen found that if debt service payment and official aid are in one to one correspondence with each other than aid flows will leave growth rate unchanged. Islam (2003) aimed to validate the effectiveness of FA on the growth of economy under diverse political regimes for developing countries. Study concluded unconstructive and insignificant relationship exist between the economic growth and FA. Ishfaq (2004) investigated this correlation using Ordinary

Least Square (OLS) method and found no significant relationship between FA and economic growth.

Hong (2004) reveals that from 2000-2009 the aid inflows in Cambodia and Vietnam are much higher than Lao PDR but aid per recipient in Lao PDR are highest among all. Further, the study concluded that FA inflows have no significant impact on growth of Cambodia's economy. Burke and Ahmadi-Esfahani (2006) analyzed the consequences of FA inflows on the growth of three South East economies of Asian region. Findings of the study indicates that no manifest declaration on significant effect of FA on economic growth was observed and these findings are valid both before and after financial crisis. It was suggested that FDI and exports have huge contribution in the economic growth of these economies. Bhandari et al. (2007) by considering six East European countries, investigated the effectiveness of FA and FDI on economic growth. The study was conducted using pooled annual time series data from 1993-2002 and concludes that no such relationship exist between FA and economic growth. While FDI increases economic growth significantly. It was also concluded that increase in labor force affect economic growth negatively as counties under consideration are labor abundant. Lamb (2010) after considering the studies of Burnside and Dollar (2000) and Moreira (2005) tried to determine whether FA has affected the growth of the economy and the poverty in existence of the fiscal policy. Study also checked the effect of socio-economic conditions of developing nations in allocation of aid and the study concluded that there does not exist any significant association between economic growth and any social or economically conditioned poverty. Also, study failed to indicate significant relationship between FA and economic growth. Shafiullah (2011) analyzed data set of 94 developing nations and analyzed the impact of FA on income disparity. The study concluded that FA rarely causes

reduction in income inequality. So, in turn there is no such role of FA on the growth of these developing economies.

2.2.4 External Debt-Economic Growth Relationship

Along with FA, a number of empirical studies on foreign assistance and economic growth investigated the impact of ED on economic growth. For instance, Cunningham (1993) investigated the impact of ED on economic growth using data set of 16 highly indebted countries. The study found that debt burden has been increased by manifold in 1980s and 1990s which have obvious consequences for both level of growth in productivity and GDP. Were (2001) analyzed the impact of ED on economic growth in Kenya, Kenya is one of the heavily indebted countries of Africa. The study considered time series data spanning from 1975-95. Study found a negative effects of ED on economic growth. In addition, findings indicates that ED has adverse effect on the private investment in Kenya. Pattillo et al., (2002) investigated the non-linear relationship between ED and economic growth for 93 developing countries. Robust results were found across different estimation techniques and model specifications. It was concluded that high external debt burden decrease GDP growth and investment in maximum developing countries. Mohamed (2005) used secondary data set from 1978-2001 to analyze the impact of ED on economic growth in Sudan. Study concludes that external debt burden is decreasing economic growth in Sudan. It was also found that debt-overhung problem is present in Sudan indicate that ED of Sudan is exceeding its capacity to repay the debt. Ayadi and Ayadi (2008) conducted a case study for Nigeria and South Africa to find out the external debt-economic growth relationship. By using OLS and GLS modelling, it was concluded that ED has adverse effect on economic growth in both nations.

Hameed et al., (2008) analyzed the long term and short term relationship developed amongst ED and economic growth for Pakistan by using annul time series data. The study found that in both in short and long run ED affects economic growth of Pakistan negatively. In addition, they observed that there is a need to increase domestic savings instead of reliance on ED. Safdari et al., (2011) have also examined the long run impact of ED and private and public investment levels on economic growth. By using VAR model, study concluded that ED and private investment have negative impact on economic growth whereas public investment has positive impact on economic growth. The findings of the study also indicate that private and public investment has a parallel moment. Checherita-Westphal et al., (2012) considered 12 European countries and find out the effect of ED on economic growth. Findings of the study reveals that ED burden decreases economic growth. Based on study findings they suggested that countries should increase domestic savings rather than reliance on ED. Sulaiman and Azeez (2012) analyzed the effectiveness of ED on economic growth in Nigeria using annul time series data spanning from 1970-2010. By using error correction model, study concludes that there is a positive contribution of ED in economic growth of Nigeria in long run. It was also suggested that ED should be gathered only for the purpose of economic growth and development.

Atique and Malik (2012) conducted the study keeping in mind two main motives. First, to find out the determinants of economic growth and second, to investigate the impact of internal borrowings and ED on economic growth. Study concludes that ED and domestic borrowing both results in economic growth's downfall. However, ED decreases economic growth more than internal debt. Bittencourt (2013) by considering nine American countries investigated the determinants of growth and ED in South American region with the conclusion that GDP growth has ability to decrease ED in any region. Tax models are more countercyclical and to increase economic growth,

debt pattern should be kept very low. Siddique and Selvanathan (2015) analyzed the level to which ED impact the GDP of developing countries and found that low external debt results in high GDP growth both in short and long time periods. Kumara and Cooray (2013) conducted a case study for Sri-Lanka hence to check the impact of ED on economic growth and came up with the conclusion that increase in ED affect economic growth positively through the investment channel. Butt and Javid (2013) used ARDL bound testing approach and analyzed the impact of FA on fiscal behavior of government. According to their findings, FA negatively affects the fiscal responsibility of the government due to low revenue collection, high ED and increase in developmental and non-developmental expenditures. Ramzan and Ahmad (2014) investigated ED and economic growth relationship considering macroeconomic policies of Pakistan and found that ED decreases economic growth. It was also found that it should be reduced in sound policy environment. Ali et al., (2014) used time series data of Pakistan spanning from 1972-2013 and investigated the effect of foreign inflows on domestic investment and economic growth. It was observed that there exists a uni-dimensional causality between ED, and savings to investment ratio.

To sum, the review concludes that the received empirical literature is away from consensus about growth effectiveness of FA and ED. Like, there are the studies which holds optimistic view and claims that FA always increases economic growth and they justify their claim by saying that developing countries actually faces three gaps and these three gaps are saving-investment gap, trade gap and fiscal gap. That is why developing countries have less space for development and social sector spending. On the contrary, the pessimistic view claims that FA always decreases economic growth and they justify their claim by giving two justifications. First, Most of these countries have week institutions that is why they cannot utilize foreign aid potentially and in turn creates rent seeker environment. Second, FA reduce the rotation of public spending towards

resource utilization and mobilization. Also, there are few studies which claims that FA holds no significant impact on economic growth. On the other hand, Most of the studies conducted to investigate ED to economic growth relationship concludes that ED decreases economic growth and claims that ED limits the growth of developing countries. While, few studies claims that ED increases economic growth through the channel of investment. Therefore, the inconclusiveness of foreign assistance-economic growth relationship force us to re-investigate this relationship. We have investigated foreign assistance-economic growth through the channel of savings to capture the role of savings in developing economy. Also, we have introduced two interaction terms, one to check whether FA and savings behaves as substitutes or complements and second to check substitutability and complementarity of ED and savings, because ED and FA are two main components of foreign assistance.

Chapter 3

Overview of Foreign Assistance and Economic Growth in Sample Countries

This chapter is devoted to present an overview of foreign assistance and economic growth of the countries under consideration. In this association section, one of the chapter presents an overview of economic growth of the sample countries. The consequent section discusses an overview of the foreign assistance of the sample countries.

3.1. An Overview of Economic Growth in the Selected Asian Countries

The countries under consideration are from the three regions of Asia and Europe namely South Asia, East Asia and Pacific, Central Asia and Eastern Europe.

3.1.1. Economic Growth in South Asian Countries

The South Asian region includes Bangladesh, Bhutan, India, Sri-Lanka, Nepal, and Pakistan. Among these economies, India and Pakistan are the two largest economies.

Table 3. 1: Five Years Average Annual Growth Rate of South Asia (Percent)

Country	GDP Growth Rates				
	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014
Bangladesh	4.59	5.00	5.43	6.14	6.14
Bhutan	4.40	6.38	7.88	8.66	6.68
India	4.69	6.84	5.65	8.14	7.21
Nepal	5.43	4.25	3.94	4.17	4.21
Pakistan	4.54	3.40	4.33	4.64	3.02
Sri-Lanka	5.58	4.94	3.96	6.03	7.46

Source: World Bank, World Development Indicators, 2014

Table 3.1 shows the five-year average annual GDP growth rates of the six economies of South Asia during 1990-2014. Amongst these countries, Sri-Lanka has experienced highest GDP growth rate in 2010-2014 that is, 7.46. Focusing particularly on Sri-Lanka, it can be observed that Sri-Lanka has experienced the highest GDP growth rate of 16.12 percent during the fourth quarter of 2012. This increase in GDP growth rate was led mostly by industrial sector. India on the other hand has experienced slight decline in GDP growth over the last five years 2010-2014 that is 7.21 compared to 8.14 percent on average at previous five years 2005-2009. Pakistan's GDP growth rate has declined over the year 2010-2014. The relatively low growth rate of Pakistan's GDP is a result of large fiscal deficits, high inflation, and relatively low investment level. Bhutan's GDP growth rate declined from average 8.66 in 2005-2009 to 6.68 in 2010-14. While Nepal's GDP growth has slightly improved over the fiscal years 2010-2014 this is 0.04 percent higher than previous one. Among South Asian economies, Nepal and Pakistan showed poor growth rates compared to their other South Asian counterparts.

3.1.2. Economic Growth Performance of East Asia and Pacific

The selected countries of this region are Vietnam, Cambodia, Indonesia, Lao PDR, Mongolia, and Philippines.

Table 3. 2: Five Years Average Annual Growth Rate of East Asia and Pacific (Percent)

Country	GDP Growth Rates				
	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014
Cambodia	8.45	6.87	8.46	8.20	6.94
Indonesia	7.99	1.68	4.57	5.63	6.18
Lao PDR	6.12	6.42	5.97	7.73	8.27
Mongolia	-4.43	3.78	5.29	6.73	12.01
Philippines	1.86	3.64	4.52	4.38	6.31
Vietnam	7.32	7.51	6.74	6.54	5.83

Source: World Bank, World Development Indicators, 2014.

Table 3.2 presents the five years average annual GDP growth rate of East Asia and Pacific region during 1990-2014. The highest GDP growth rate in this region over the period 2010-2014 is observed for Mongolia that is 12.01 which is around double the previous period 2005-2009. The reason behind this increase in Mongolia's GDP growth is that Mongolia's economy boomed in the years since 2010 and poverty is decreased by around 11 percent. Cambodia's GDP rate has decrease over the fiscal year 2010-2014 compared to 5.63 percent on average at previous five years 2005-2009. Reasons behind low GDP growth of Cambodia are illiteracy, lack of skilled labor force and inadequate infrastructure Lee (2011). Same pattern can be observed for Vietnam. Vietnam's GDP growth rate declined from average 6.54 in 2005-2009 to 5.83 in 2010-2014. The GDP growth rate for Indonesia and Lao PDR has slightly increased as compare to previous fiscal year period. While Philippines's growth rate has improved by around 2.0 percent on average over the fiscal year period 2010-2014 as compared to last five year's average. Philippines is considered as the fastest growing economy of Asia. Philippines have achieved high GDP growth rate during 2013 that is 7.2 percent driven by growing business process and overseas remittances WDI (2013).

3.1.3. Economic Growth Performance of Eastern Europe and Central Asian Region

The countries under consideration from this region are Armenia, Georgia, Kyrgyz Republic, Tajikistan and Ukraine.

Table 3. 3: Five Years Average Annual Growth Rate of Eastern Europe and Central Asian Region (Percent)

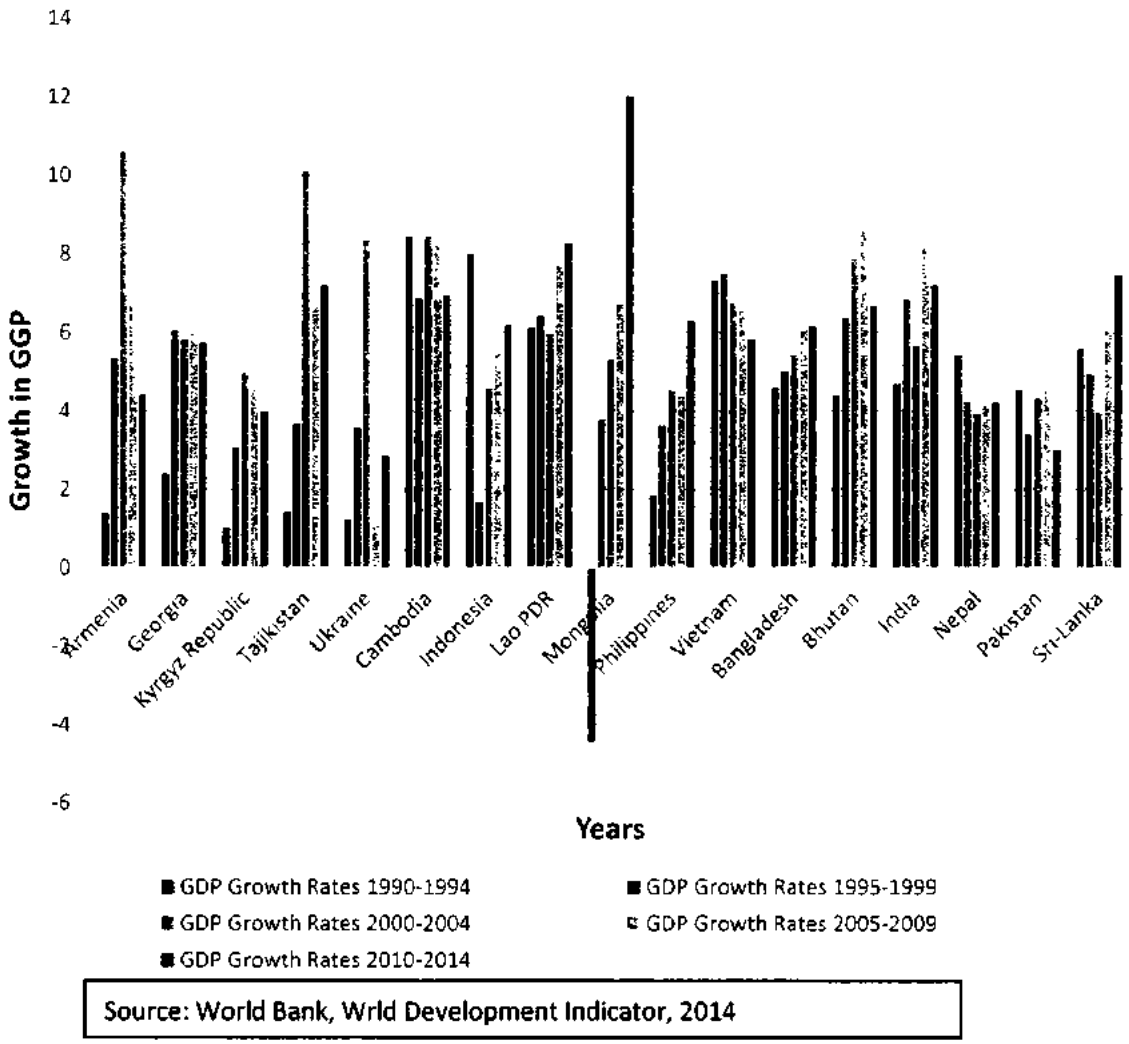
Country	GDP Growth Rates				
	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014
Armenia	1.40	5.33	10.6	6.71	4.40
Georgia	2.40	6.05	5.80	5.97	5.73
Kyrgyz Republic	1.03	3.07	4.95	4.55	3.98
Tajikistan	1.43	3.68	10.11	6.64	7.20
Ukraine	1.23	3.58	8.36	1.08	2.86

Source: World Bank, World Development Indicators, 2014.

Table 3.3 shows the five year average annual GDP growth rate of East Europe and Central Asia during 1990-2014. Amongst these five countries, Tajikistan has experienced highest GDP growth rate 7.20 over the year 2010-2014 compared to 6.64 percent on average of previous five years 2005-2009. Tajikistan has experienced low GDP growth rates during 1990-1999 due to war. During 2000-2010, Tajikistan's economy expanded at an average of around 9 percent with huge contribution of foreign assistance and remittances. Armenia's GDP rate has experienced decline over the fiscal year 2010-2014 as compare to 2005-2009 which is 4.40 and 6.71 respectively. The GDP growth rate for Kyrgyz Republic has slightly declined from 4.55 in 2005-2009 to 3.98 percent on average over 2010-2014 while for Ukraine GDP growth has doubled to 2.86 in 2010-2014 on average as compare to previous fiscal year 2005-2009. But still Ukraine's GDP growth rate is lowest amongst these countries.

3.1.4. Economic Growth Performance of Selected Asian Countries

Figure 3. 1: Five Years Average Annual Growth Rate of Selected Asian Countries (Percent)



Source: World Bank, Wrld Development Indicator, 2014

Figure 3.1 shows the five year average annual GDP growth rates of selected Asian countries during 1990-2014. Amongst all the countries, Mongolia has experienced highest GDP growth rate 12.01percent over the year 2010-2014 compared to lowest -4.43 percent on average of fiscal year 1990-1994. Reason behind this lowest and negative GDP growth rate of Mongolia was the

recession occurred in 1990s and in the fourth quarter of 1992, Mongolia had experienced the record lowest GDP growth of -9.30 percent. Mongolia again gained the pace in 1997-99 and attained highest GDP growth rate of 17.50 during fourth quarter of 2011. While Ukraine has experienced lowest GDP growth rate during fiscal year 2010-2014. But still Ukraine's average GDP growth rate has doubled during 2010-2014 to 2.86 from 1.08 of fiscal year 2005-2009. The GDP growth rates for Indonesia, Philippines and Lao PDR has slightly increased as compare to previous fiscal year period. Focusing particularly on average fiscal year 2010-2014, a decline in GDP growth rate in 8 out of 17 countries including Pakistan and India can be observed. The relatively low growth rates are a result of large fiscal deficits, high inflation, and relatively low investment level in respective countries. Comparing the average GDP growth rates of Bangladesh and Nepal during fiscal year 2005-2009 with 2010-2014, it can be observed that average GDP growth rates have almost remained same.

3.2. Overview of Foreign Aid in the Sample Countries

Moreira (2005) concludes that in different developing countries including East Asian, FA has more significant and positive impact on economic growth in long run as compare to short run. Ekanayake and Chatrna (2010) highlighted that in 2006-2007 distribution of FA by region (percent) from total bilateral aid in South and Central Asia was 10.5 percent while for other regions it was 12.7 percent. Which shows that FA is somewhat important for the growth of developing countries in Asia.

3.2.1. Overview of Foreign Aid in South Asia

Table 3. 4: Five Years Average Annual Foreign Aid to GDP of South Asia (Percent)

Country	ODA/GDP Ratios				
	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014
Bangladesh	0.06	0.03	0.02	0.02	0.01
Bhutan	0.23	0.18	0.12	0.09	0.08
India	0.10	0.01	0.002	0.01	0.001
Nepal	0.11	0.08	0.06	0.06	0.04
Pakistan	0.03	0.01	0.02	0.01	0.01
Sri-Lanka	0.07	0.03	0.02	0.02	0.01

Source: World Bank, World Development Indicators, 2014

Table 3.4 presents the ODA to GDP ratios of South Asia region during 1990-2014. Data presented in the table shows that the proportion is highest for Bhutan that is 0.08 in 2010-2014 but still it has slightly declined from average 0.09 in 2005-2009. Nepal's ODA to GDP ratio has also declined from 0.06 in 2005-2009 to 0.04 in 2010-2014. Pakistan, Bangladesh and Sri-Lanka has 0.01 ODA to GDP ratio in 2010-2014. Pakistan receive ODA from several countries because of relatively low saving and investment levels, high imports and inflation. While India has observed decline to 0.001 in 2010-2014 from 0.01 percent on average in 2005-2009. It can be concluded that amongst all these countries Bhutan has huge reliance on FA for economic growth. On the other hand, India has the lowest reliance on FA. Sahoo and Sethi (2013) argued that FA highly contributes to economic growth of India but that growth is not translated into productive development.

3.2.2 Overview of Foreign Aid in East Asian and Pacific' Region

Table 3. 5: Five Years Average Annual Foreign Aid to GDP of East Asia and Pacific (Percent)

Country	ODA/GDP Ratios				
	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014
Cambodia	0.09	0.11	0.10	0.07	0.06
Indonesia	0.01	0.01	0.01	0.04	0.006
Lao PDR	0.15	0.19	0.14	0.09	0.05
Mongolia	0.10	0.18	0.16	0.06	0.04
Philippines	0.02	0.01	0.01	0.003	0.001
Vietnam	0.03	0.04	0.04	0.03	0.02

Source: World Bank, World Development Indicators, 2014

Table 3.5 depicts ODA to GDP ratios of East Asia and pacific region during 1990-2014. Data presented in the table shows that with time ODA to GDP is declining on average. For instance, in case of Cambodia it decline to 0.06 percent in 2010-14 from was 0.11 percent in 1995-99. While 1 percent decline is observed if we compare it with previous five years average. The ODA to GDP ratio decline has been the most significant with Philippines where the decline from 0.02 to 0.001, indicating a clear shift of reduced overall foreign assistance. Vietnam has showed the least decline in ODA to GDP ratio, of just about 1 basis point. The ODA to GDP ratio was the highest during the period 1995-1999 with an average of 0.09 with Lao PDR and Mongolia clearly being the outliers with 0.19 and 0.18 respectively. Focusing particularly on 2010-2014, ODA to GDP ratio is highest for Cambodia followed by Lao PDR, Mongolia and Vietnam. While the ratio is lowest for Indonesia.

3.2.3. Overview of Foreign Aid in Europe and Central Asia

Table 3. 6: Five Years Average Annual Foreign Aid to GDP of Europe and Central Asia (Percent)

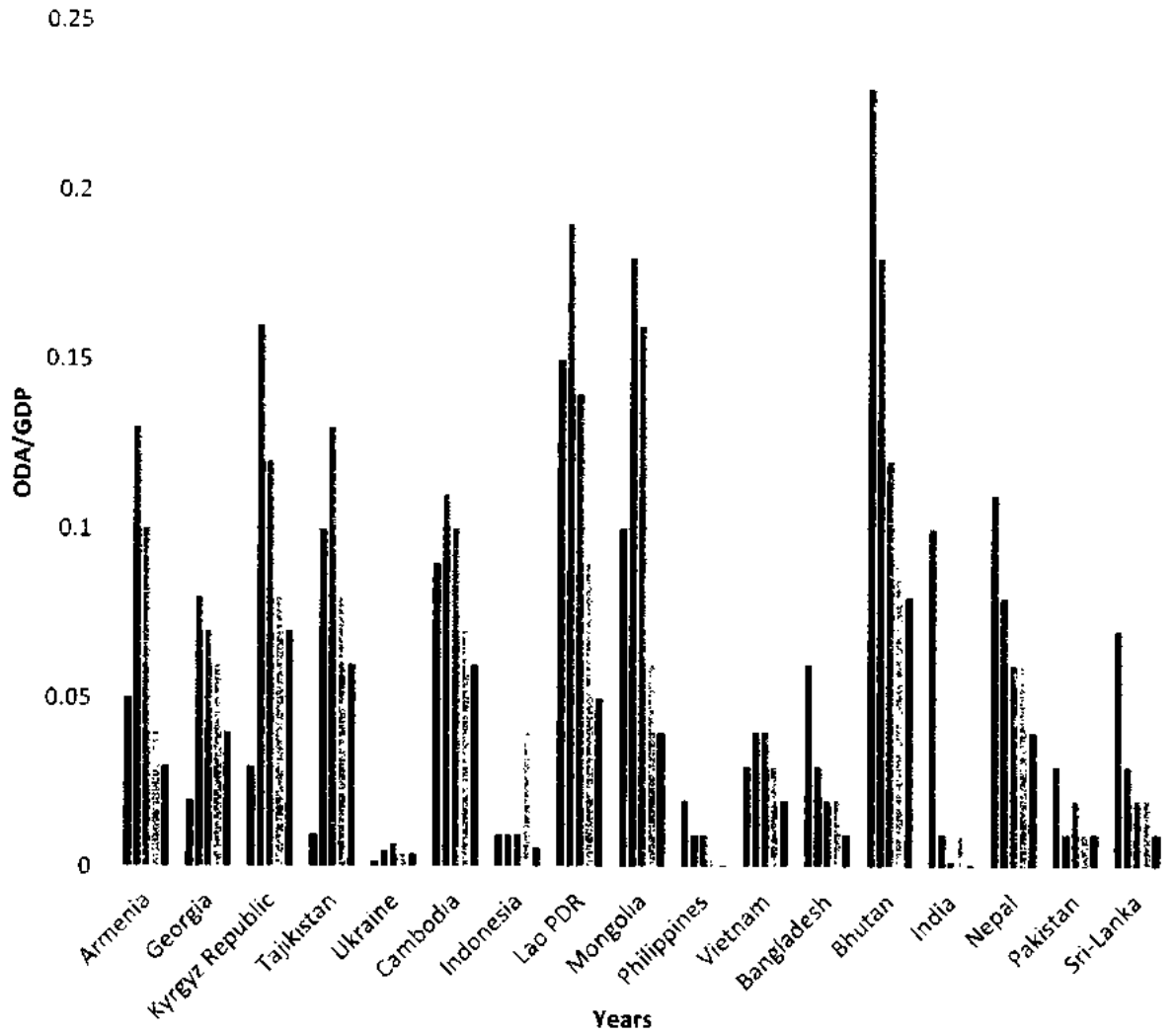
Country	ODA/GDP Ratios				
	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014
Armenia	0.05	0.13	0.10	0.04	0.03
Georgia	0.02	0.08	0.07	0.06	0.04
Kyrgyz Republic	0.03	0.16	0.12	0.08	0.07
Tajikistan	0.01	0.10	0.13	0.08	0.06
Ukraine	0.002	0.005	0.007	0.004	0.004

Source: World Bank, World Development Indicators, 2014

Data presented in table 3.5 shows that ODA to GDP ratio declining in all countries except Ukraine where this ratio is constant during 2010-2014. ODA to GDP ratio has increased from 1990-1994 to 2010-2014 for the countries shown in the table by approximately 0.02 to 0.04 showing an increase in 2 basis points. Armenia is the exception in this case where the ODA to GDP ratio has reduced by 1 basis points from 0.04 to 0.03 clearly signaling an increase in self-dependence of Armenia. ODA to GDP ratio of Georgia is also declined by 2 percent. Kyrgyz Republic's ODA to GDP ratio has observed slight decline but still it is highest amongst all other countries in the table followed by Tajikistan and Georgia while lowest in Ukraine in 2010-2014.

3.2.4. Overview of Foreign Aid in Selected Asian Countries

Figure 3. 2: Five Years Average Annual Foreign Aid to GDP of Selected Asian Countries



Source: World Bank, World Development Indicator, 2014.

Figure 3.2 shows the five year average annual ODA to GDP ratios of selected Asian countries during 1990-2014. Amongst all the countries, Bhutan has experienced highest ODA to GDP ratio 0.08 percent over the year 2010-2014. Bhutan's ODA to GDP ratio has declined by .01 percent as compare to the previous five year average ODA to GDP ratio. Which means that Bhutan's reliance

on ODA for economic growth has declined over the fiscal year 2010-2014. On the other hand, India and Philippines have lowest ODA to GDP ratio 0.001 during fiscal year 2010-2014. Which indicates that Philippines and India has less reliance on foreign aid to increase economic growth. The GDP growth rates for Indonesia, Philippines and Lao PDR has slightly decreased as compare to previous fiscal year period. Focusing particularly on average fiscal year 2010-2014, a slight decline in ODA to GDP ratio has observed in all countries except Pakistan. Pakistan's average ODA to GDP ratio during fiscal year 2010-2014 has remained same when compared with previous fiscal year 2005-2009. While, mixed trend has observed from 1990-2014.

3.3. Overview External Debt in Sample Countries

The countries under consideration are from the three regions of Asia and Europe namely South Asia, East Asia and Pacific, Central Asia and Eastern Europe.

3.3.1. Eternal Debt to GDP in South Asia Region

India and Pakistan are the two largest economies of South Asia. The scenario of ED has changed in these two countries over the years. According to World Bank (2001), India's ranking has improved from moderately indebted to less indebted low income in 2007. While Pakistan's ranking has decreased from moderately indebted low income to severely indebted low-income country in 1997.

Table 3. 7: Five Years Average Annual External Debt to GDP of South Asia (Percent)

Country	ED/GDP Ratios				
	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014
Bangladesh	0.42	0.36	0.33	0.26	0.20
Bhutan	0.35	0.38	0.68	0.67	0.67
India	0.30	0.23	0.19	0.17	0.20
Nepal	0.50	0.54	0.49	0.34	0.21
Pakistan	0.51	0.50	0.43	0.30	0.29
Sri-Lanka	0.69	0.59	0.55	0.42	0.38

Source: World Bank, World Development Indicators, 2014

Table 3.7 shows external debt to GDP ratios of different South Asian countries during 1990-2014. Data presented in the table indicates that during 2010-2014, Bhutan has highest ED to GDP ratio. Pakistan's ED to GDP ratio has experienced slight decline of 0.01 percent during fiscal year 2010-2014. Focusing particularly on Pakistan, it can be seen that Pakistan's reliance on ED to increase its GDP is declined from 0.51 to 0.29. While India's ED to GDP ratio has increased by 3 percent during 2010-2014. Nepal and Bangladesh has experienced decline in ED to GDP ratio over the same period. Focusing on 2010-2014, it can be observed that Bhutan has highest ED to GDP ratio followed by Sri-Lanka and Pakistan.

3.3.2. Eternal Debt to GDP in East Asia and Pacific Region

Table 3. 8: Five Years Average Annual External Debt to GDP of East Asia and Pacific (Percent)

Country	ED/GDP Growth Rates				
	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014
Cambodia	1.13	0.70	0.68	0.40	0.37
Indonesia	0.60	0.89	0.69	0.37	0.27
Lao PDR	1.67	1.48	1.37	1.02	0.79
Mongolia	0.26	0.56	0.82	0.48	1.29
Philippines	0.66	0.62	0.72	0.42	0.26
Vietnam	2.37	0.94	0.36	0.29	0.38

Source: World Bank, World Development Indicators, 2014

Table 3.8 shows an overview of ED to GDP ratios of six East Asia and Pacific nations during 1990-2014. According to data presented, Cambodia's ED to GDP ratio is decreasing since 1990. During 2010-2014 it is at its lowest level that is 0.37. Same pattern can be observed for Indonesia, Lao PDR and Philippines. Lao PDR is amongst the highest recipient of ED since 1990 while Philippines has experienced slight decline in ED to GDP ratio over the past few years. Mongolia's external debt to GDP ratio has increased three times during fiscal year 2010-2014 as compare to 2005-2009. Focusing on Mongolia, it can be observed that Mongolia's dependence on ED has increased five times if we compare it with 1990-1994. Vietnam has also observed decline in ED to GDP ratio from 1990-2009 but in 1990-1994 Vietnam has experienced highest ED to GDP ratio amongst these countries followed by Lao PDR and Cambodia respectively. During 2010-2014, ED to GDP of Vietnam ratio has again increased from 0.29 to 0.38. Focusing on 2010-2014, it can be concluded that Mongolia is highest recipient of ED while Philippines is at the last position.

3.3.3. Eternal Debt to GDP in Europe and Central Asia Region

Table 3. 9: Five Years Average Annual External Debt to GDP of Europe and Central Asia (Percent)

Country	ED/GDP Growth Rates				
	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014
Armenia	-0.02	0.38	0.64	0.38	0.75
Georgia	0.24	0.48	0.55	0.46	0.82
Kyrgyz Republic	1.30	0.82	1.22	0.83	0.89
Tajikistan	0.30	0.91	0.96	0.44	0.48
Ukraine	0.18	0.27	0.51	0.57	0.83

Source: World Bank, World Development Indicators, 2014

Table 3.9 shows an overview of ED to GDP ratios of five Europe and Central Asian countries during 1990-2014. Data presented in the table shows that with time external debt to GDP is increasing. For instance, in case of Armenia it increase to 0.75 percent in 2010-14 from -0.02 percent in 1995-99. Comparing it with previous five year average of 2005-2009 it can be observed that ED to GDP ratio for Armenia is around doubled. ED to GDP ratio of Georgia and Ukraine has also increased many times if compared with five year average of 1990-1994. Kyrgyz Republic's ED to GDP ratio has also increased from 0.83 to 0.89 during 2010-2014. The reason behind this huge dependence on ED is corruption prevailing in the country, relatively low investment and regional instability. Tajikistan's ED to GDP ratio has also increased by 4 percent. Focusing particularly on 2010-2014, Kyrgyz Republic has experienced highest ED to GDP ratio while it is lowest for Tajikistan.

3.3.4. Eternal Debt to GDP in Selected Asian Countries

Figure 3. 3: Five Years Average Annual External Debt to GDP of Selected Asian Countries

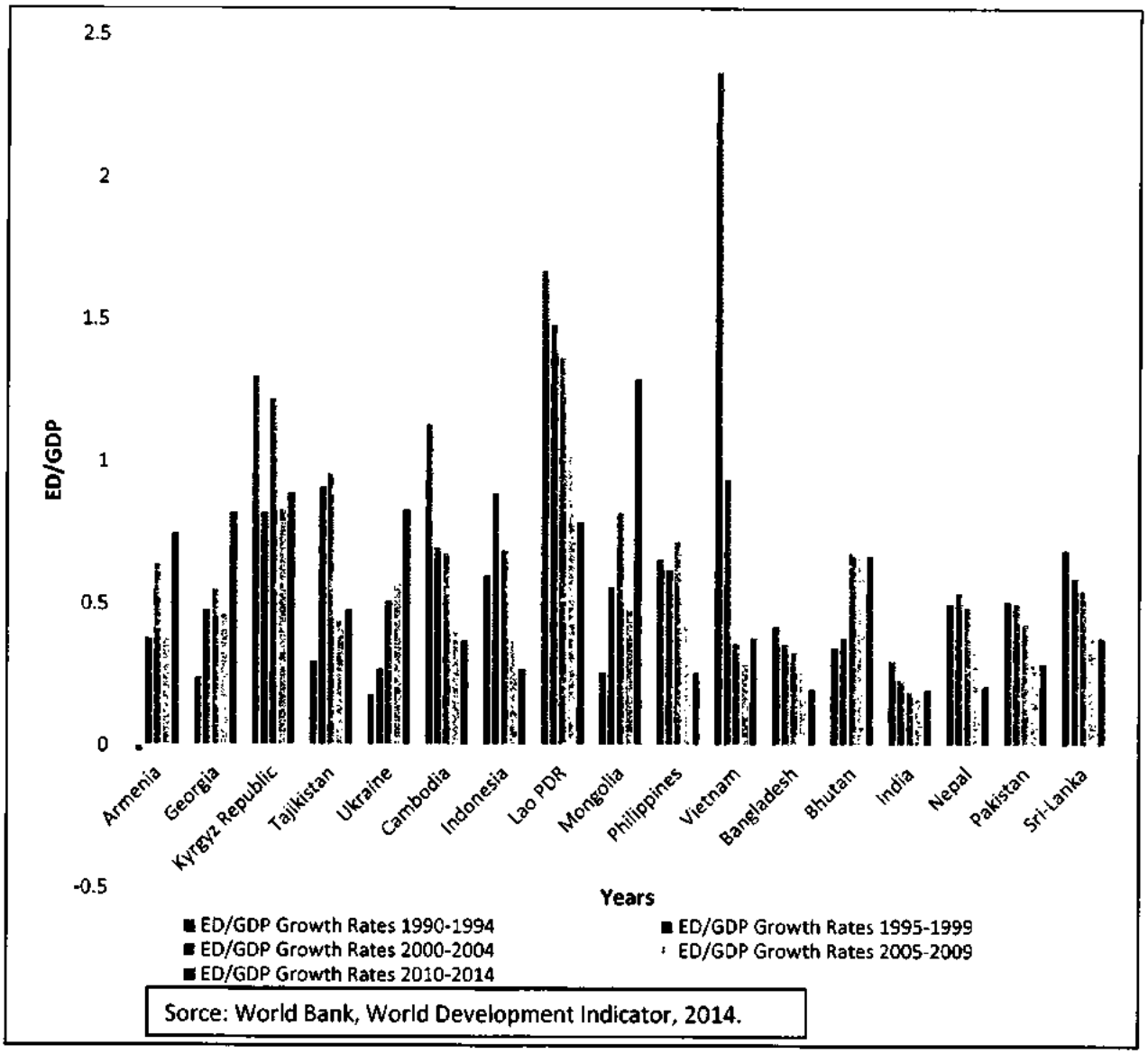


Figure 3.3 shows an overview of five year average annual ED to GDP ratios of whole sample. Amongst all the countries, Mongolia has experienced highest average ED to GDP ratio 1.29 over the fiscal year 2010-2014. Kyrgyz Republic's ED to GDP ratio has more than doubled when compared with previous average of 2005-2009. Kyrgyz Republic has experienced second highest

average ED to GDP ratio 0.89 over the fiscal year 2010-2014. Kyrgyz Republic's ED to GDP ratio has increased by .06 during fiscal year 2010-2014 from 0.83 over the fiscal year 2005-2009. Which indicates that Kyrgyz Republic's dependence on ED to increase economic growth has increased by 6 percent over the fiscal year 2010-2014. Figure indicates that Georgia, Armenia, Ukraine, Cambodia and Armenia's average ED to GDP ratio for fiscal year 2010-2014 has almost doubled than 2005-2009. Bangladesh and India have lowest ED to GDP ratio 0.26 during fiscal year 2010-2014. Which indicates that Bangladesh and India has less reliance on ED to increase economic growth as compare to other 15 countries. The average ED to GDP ratios of Pakistan, Philippines and Sri-Lanka over 2010-2014 has slightly decreased as compare to previous five year averages of 2005-2009.

3.4 Key Findings

Asia is one of the largest and most populous continent on earth. Most of the Asian countries share common culture, diverse climate and demographic features. Also, diverse demographic characteristic can be observed for different countries of this continent. In late 1990s and early 2000s, economy of India have experienced rapid growth with an average of around 8 percent. High growth nations of Asia includes Pakistan, Vietnam, Bangladesh, India, Philippines and Mongolia. In terms of growth, in early 1990's Mongolia has experienced negative and lowest GDP growth rate and Cambodia has experienced highest GDP growth rate. While in past few years, Mongolia has topped the list with highest GDP growth rates and Ukraine is amongst the countries with lowest growth fundamentals.

Most of the developing economies of Asia have huge reliance on foreign assistance (FA and ED) to alter their economic growth and to fill the three gaps as indicated by three gap model. Amongst

these 17 countries, Bhutan has highest ODA to GDP ratio which means that Bhutan has most reliance on ODA to increase its economic growth. On the other hand, India and Philippines have experienced lowest ODA to GDP ratio during past few years. In terms of ED to GDP ratio, Mongolia is topping the list followed by Kyrgyz Republic while Nepal and India have lowest ED to GDP ratio.[5]

[5] See Appendix A.

Chapter 4

Methodology

4.1. Theoretical Framework

Existing studies stated different mechanisms through which foreign assistance affect economic growth. These studies have explained the causal mechanism in different growth framework. For instance Morrissey (2001) analyzed the impact of foreign assistance on economic growth in the two gap model using augmented neoclassical framework. Combining the insights of these theories one can draw different mechanisms through which FA can affect growth. Firstly, FA increases investment opportunities both in human and physical capital. According to Harrod (1939) and Domar (1946) model, savings determines the level of investment both in public and private sector, and if government wants to increase growth rate they have to increase the level of savings in the economy. Whereas, if level of savings is low then economy will start relying on foreign assistance which in turn will increase the level of investment and will result in economic growth. While according to Solow (1956) model, the growth of any economy is determined by increase in capital output ratio. This in turn depends on saving and population growth. In addition to saving-investment gap there is also a foreign exchange gap. These two gaps are combined in two gap model proposed by Chenery and Strout (1966). It is further explained that because of shortage of physical capital accumulation in developing economies all goods cannot be produced domestically. Hence, a certain level of import is required to attain the desired level of investment and economic growth. If exports are not enough to fulfill the desired level of imports than foreign exchange gap occurs. Morrissey (2001) states that FA helps to overcome the foreign exchange gap and increases the capacity to import goods. Developing countries export primary goods and starts

relying on foreign assistance to fulfill this foreign exchange gap which in turn increase import of investment goods and alter economic growth. Waheed (2004) added that ED also helps to fill these two gaps but problem may arise in form of future repayments which may affect the economic performance of developing countries. Chenery and Strout (1966) further added that developing countries also face scarcity of technological abilities for efficient production. Foreign assistance is associated with technology transfer that increases the productivity of factors of production and long run growth of per capita will increase. Bacha (1990) and Taylor (1990) proposed a three gap model and the third gap is fiscal gap between government revenue and expenditures. Hence, it can be summarized that developing countries actually faces three gaps and all these gap models predict a positive role of foreign assistance to supplement domestic savings, investment, and government revenue and foreign exchange earnings and in turn promote economic growth.

It is expected that when developing country receive foreign assistance from some developed country, the assistance is utilized in unfinanced projects and to decrease the budget deficit. After receiving foreign assistance the stagnant process of production gradually increases and foreign assistance is further accumulated in different projects. These projects lead to increase in employment opportunities, income and purchasing power and decrease the demand and supply gap. Increased level of savings create an atmosphere for investment and with the passage of time country gather high revenue and become self-sufficient which further contributes in economic growth .

4.2. Empirical Model

In order to test the hypothesis empirically the following empirical model have estimated which is quite similar to that of Burnside and Dollar (2000) and Dolgaard et al., (2004);

$$GGDP_{it} = \alpha_0 + \alpha_1(ODA_{it}) + \alpha_2(ED_{it}) + \alpha_3(GPOP_{it}) + \alpha_4(S_{it}) + \alpha_5(INV_{it}) + \alpha_6(HC_{it}) + \alpha_7(TOP_{it}) + \alpha_8(ODA * S)_{it} + \alpha_9(ED * S)_{it} + \varepsilon_{it} \quad (1)$$

Where the subscript i denotes cross-sectional and t is a time period.

$GGDP_{it}$ = Growth in GDP, considered as a dependent variable

ODA_{it} = Official Development Assistance is a proxy variable of foreign aid to GDP ratio

ED_{it} = External Debt to GDP ratio

$GPOP_{it}$ = Total population and its growth is used as proxy variable for growth in labor force

HC_{it} = Human Capital, the proxy variable that we are using for human capital is primary enrollment level in gross percentage.

TOP_{it} = Trade Openness, we used exports plus imports to GDP ratio as proxy of trade openness

S_{it} = Savings to GDP ratio, and INV_{it} = Investment to GDP ratio is the other independent variables under consideration

While the expressions $(ODA * S)_{it}$ and $(ED * S)_{it}$ represents interaction between FA and savings to GDP ratio and ED and savings to GDP ratio respectively to investigate how both variables behave with each other. We have followed the specification adopted by Burnside and Dollar (2000). They used the interaction term Aid*Policy to check the effect of FA on economic growth in presence of good policy environment. In the same manner, we have introduced two interaction terms in our model because we have considered two main components of foreign assistance that is FA and ED.[6]

[6] Our base model consists of two interaction terms but in a sensitivity analysis different specifications are introduced for both of the terms

First interaction term is introduced to cover the impact of FA on economic growth through the channel of savings while Second interaction term to check the impact of ED on economic growth through savings. First, we will compare the signs of α_1 and α_8 . If the signs are opposite, it will be the case of substitutes and we will conclude that FA and savings are substitutes. If the signs are same, it will be the case of complements and we will conclude that FA and savings are complements of each other. Than we will look at the signs of $\alpha_2$and α_9. If their signs are opposite, it means that ED and savings are substitutes. While, if the signs are same, it means that ED and savings are complements.

While ε_{it} is a random error term.

4.3. Variables Definition and Construction

4.3.1. Dependent Variable

i. Growth in GDP (Annual Percent)

The dependent variable is annual real GDP growth in percent. GDP is the money value of all the good and services produced within the boundaries of country over a year. It is a primary variable use to measure growth of any economy. Data on growth in GDP is taken from World Development Indicators (WDI) for the countries under consideration.

4.3.2. Independent Variables

i. **Official Development Assistance (ODA) to GDP Ratio (ODA_{it})**

ODA is widely used as an indicator of international aid flows, which consists of the undertaken by the official sector including state and local government for the development

purpose at concessional terms. We have taken official development assistance to GDP ratio, data on both variables have taken from WDI (2013).

ii. **External Debt (ED) to GDP Ratio (ED_{it})**

"ED is the part of country's debt that is borrowed from foreign lenders including; commercial banks, government and financial institutions." We have taken ED to GDP ratio, data on both variables have taken from WDI (2013).

iii. **Physical Capital (INV_{it})**

Investment is the allocation of money or other resources in the expectation of some benefit in future. "Investment to GDP ratio" is used as proxy of physical capital, the data of investment is taken from WDI (2013).

iv. **Savings (S_{it})**

"Savings to GDP ratio is sum of national savings to GDP ratio", the data of savings is taken from WDI (2013).

v. **Population Growth Rate($GPOP_{it}$)**

It is measured as an "annual percentage change in population" and data is taken form WDI (2013). Theoretically, growth rate of population and growth rate of output are negatively associated with each other. So, increase or decrease in population is considered to have great impact on economic growth.

vi. **Human Capital(HC_{it})**

Human capital is one of the most important determinants of economic growth. Existing studies have used different proxies of human capital like primary education in gross

percentage, secondary education in gross percentage and health. Here, we used "primary enrollment in gross percentage". Data on is taken from WDI (2013).

vii. **Trade Openness to GDP (TOP_{it})**

Existing studies have used three different proxies of trade openness, that exports plus imports to GDP, exports to GDP, imports to GDP. In this study, we used exports plus imports to GDP are proxy of trade openness. It is considered to have great impact on economic growth through the exploitation of resources. The data is taken from Penn World Table (8.1).

4.4. Data and Data Sources

As mentioned earlier in the introductory part of the study that the study uses data set of 17 selected Asian countries from three different regions that spanning from 1990-2014. The data of sample countries for variables under consideration is taken from official sources including International Monetary Fund (IMF), World Development Indicators (WDI) or World Bank and Penn World Table 8.1.

4.5. Estimation Technique: Arellano–Bond Dynamic Panel GMM Estimators

As our data set is pooled time series in nature, hence the feasible estimation technique is panel econometrics. To specify a suitable estimation technique we have utilize some specifications tests. For instance, to check whether the intercept values remain the same for all cross sections and to make a choice between Pooled OLS and Random effect we used Breusch-Pagan (1979) test to investigate whether cross-section specific fixed effects matter we applied Breusch-Pagan Lagrange Multiplier test, to make a choice between Pooled OLS and Random Effect. As the null hypothesis,

H_0: Constant variance, is not accepted so we may conclude that country specific fixed effect matters, hence instead of Pooled OLS, the suitable estimation technique is Random effect.[7] We used Hausman (1978) test to find out the behavior of omitted variables and to check the validity of random effect. As the null hypothesis of Hausman Test, H_0: fixed effects are not effective estimates, is accepted for most of the specifications, so it is concluded that Fixed Effect is more appropriate.[8] Next, we have used Redundant Fixed Effect test to make choice among fixed effects means that we want to test that among fixed effects (i.e. cross-section, time, both cross-section, and time) which one is more appropriate. In all three cases, the null hypothesis is not accepted in indicates that our model is dynamic and dynamic correlation exists.[9] In addition we also applied Serial Correlation (LM) test to check dependent variable's dependency on its lag, the null hypothesis "no serial correlation" is rejected in all ten specifications which indicates that serial correlation exists and dependent variable that is GGDP depends on its lag.[10] We also applied VIF test to check multicollinearity. Results indicate that no multicollinearity exists.[11]

Keeping in view the results of all these specification tests, we safely concluded that our model is dynamic in nature and the proceeded estimation technique is hence Generalized Method of moments (GMM) developed by Arellano and Bond in 1991. It is the most efficient and appropriate technique to estimate the dynamic panel growth model. GMM estimation technique is widely used in growth econometrics for dynamic analysis, GMM is better than the Maximum Likelihood (ML) method and the Two Stage Least Square (2SLS) methods. Arellano and Bond did a comparative

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[8] See Appendix C for results
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study of the performance of OLS and GMM. Based on the simulation, they came to the conclusion that the GMM estimators depict the least variation and bias.

There are several benefits of GMM estimation which includes firstly an estimation procedure that allows models to be determined, to prevent surplus or unnecessary assumptions (Hall, 2005). Secondly, GMM is a suitable method to obtain efficient estimators that considers the serial correlation. Thirdly, the GMM estimator, even with additional time conditions provide efficient estimations. Fourthly, in existence of heteroscedasticity GMM method provide comparatively more efficient estimator than the simpler 2SLS estimator.[12]

4.6. Sample of Countries

Our sample consists of 17 developing countries. We have included seventeen countries from three different regions of Asia that are developing and lower income at the same time.

Table 4. 1: List of Countries

Armenia	Kyrgyz Republic	Lao PDR	Philippines
Bangladesh	Georgia	Mongolia	Sri-Lanka
Bhutan	Indonesia	Nepal	Tajikistan
Cambodia	India	Pakistan	Ukraine
Vietnam			

There are two motivations that we have selected these countries. One possible justification is that most of these countries depend on foreign assistance and it plays a vital role in economic growth.

[12] Arellano and Bond (1991) assumes small T and large N for their proposed GMM estimator. However, Alvarez and Arellano (2003) in Monte Carlo experiments found that GMM provide unbiased estimate even when T is significantly large. Moreover, there are number of notable studies that used GMM as estimation technique with small N and large T. See for example Omri, 2013; Zhang and Zin, 2012; Javed and Arif, 2012 among others.

Other justification is that such economies have same growth fundamentals so it will help us to avoid heterogeneity.

4.7. Summary Statistics of Variables under Consideration

Table 4.2 depicts the statistics summarization of the variables which are under consideration. It shows the No. of observations to be totaled at 408. The standard deviation values show the dispersion of data set from its mean. Low standard deviation shows the data points are very close to the mean. While, high standard deviation tends to show the data points spread out over a large range of values. In our case, the value of standard deviation is very high for savings which signify that the data points for savings are deviated from mean and spread over large range of values. While, Standard deviation is lowest for ODA which means that the data points are very near to mean value and not spread over large range of values.

Table 4. 2: Summary Statistics of Variables Under Consideration

Variable	Observations	Mean	Std. Dev	Minimum	Maximum
$GPOP_{it}$	408	1.278	1.099	-2.65	17.92
HC_{it}	408	102.46	15.06	46.24	142.92
TOP_{it}	408	0.763	0.341	0.04	1.996
ODA_{it}	408	0.058	0.056	-0.004	0.269
ED_{it}	408	0.597	0.495	-0.436	6.242
S_{it}	408	-2.126	56.88	-1126.99	213.05
INV_{it}	408	0.250	0.105	1.83e-05	0.679

Chapter 5

Empirical Findings and Discussions

As earlier, discussed in the introductory chapter that the key objective of the study is to analyze the impact of foreign assistance on economic growth of 17 selected developing countries of Asia. The study also aims to investigate that whether foreign assistance work as a substitute of saving in these selected developing countries. We have estimated the growth equation (equation 1) for 17 countries using the panel data over the period 1990-2013. We have included two interaction terms, first, to capture the relationship between FA and savings while second, to capture whether ED and savings behaves as substitutes or complements. The estimations provide deep insights into the relationships among foreign assistance and savings and their impact on economic growth. The empirical results of our growth equation (equation 1) are presented in table 5.1(a) and 5.1(b). Onwards for specification 1 we have made specification analysis. Table 5.1(a) includes the first five specifications while table 5.1(b) presents the empirical findings of remaining five specifications.

Table 5. 1(a): Economic Growth Model: Dependent Variable is Growth in GDP ($GGDP_{it}$)

Variables	S_1	S_2	S_3	S_4	S_5
$GGDP_{it}-1$	0.529***	0.552***	0.509***	0.541***	0.611***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
$GPOP_{it}$	-0.824**	-1.30*	-1.02*	-1.623**	-1.389***
	(0.033)	(0.110)	(0.223)	(0.050)	(0.010)
HC_{it}	-0.081*	0.100*	-0.105*	-0.127*	-0.126*
	(0.261)	(0.100)	(0.105)	(0.060)	(0.081)
TOP_{it}	8.666***	8.357***	7.764***	7.328***	9.008**
	(0.000)	(0.001)	(0.001)	(0.003)	(0.023)
ODA_{it}	40.12***	---------	52.30***	---------	---------
	(0.013)		(0.001)		
ED_{it}	---------	4.31**	---------	5.44***	---------
		(0.020)		(0.006)	
S_{it}	0.065***	0.644***	---------	---------	0.045*
	(0.008)	(0.009)			(0.053)
INV_{it}	---------	---------	27.24***	25.92***	.....
			(0.000)	(0.000)	
$ODAS_{it}$	---------	---------	---------	---------	0.005**
					(0.020)
EDS_{it}	---------	---------	---------	---------	---------
Number of observations	374	374	374	374	374
Number of countries	17	17	17	17	17
Number of instruments	28	28	28	28	28
Sargan P-Value	0.91	0.98	0.93	0.97	0.87

i) **P-value is in parenthesis.**

ii) **Equations are corrected for heteroscedasticity where needed.**

iii) *****, **, * shows level of significance at 1%, 5%, and 10% respectively.**

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$GPOP_{it}$	-0.824**	-1.30*	-1.02*	-1.623**	-1.389***
	(0.033)	(0.110)	(0.223)	(0.050)	(0.010)
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TOP_{it}	8.666***	8.357***	7.764***	7.328***	9.008**
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ODA_{it}	40.12***	---------	52.30***	---------	---------
	(0.013)		(0.001)		
ED_{it}	---------	4.31**	---------	5.44***	---------
		(0.020)		(0.006)	
S_{it}	0.065***	0.644***	---------	---------	0.045*
	(0.008)	(0.009)			(0.053)
INV_{it}	---------	---------	27.24***	25.92***	.....
			(0.000)	(0.000)	
$ODAS_{it}$	---------	---------	---------	---------	0.005**
					(0.020)
EDS_{it}	---------	---------	---------	---------	---------
Number of observations	374	374	374	374	374
Number of countries	17	17	17	17	17
Number of instruments	28	28	28	28	28
Sargan P-Value	0.91	0.98	0.93	0.97	0.87

i) **P-value is in parenthesis.**
ii) **Equations are corrected for heteroscedasticity where needed.**
iii) *****, **, * shows level of significance at 1%, 5%, and 10% respectively.**

Table 5.1(b): Economic Growth Model: Dependent Variable is Growth in GDP ($GGDP_{it}$)

Variables	S_6	S_7	S_8	S_9	S_10
$GGDP_{it-1}$	0.612***	0.590***	0.544***	0.586***	0.580***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
$GPOP_{it}$	-1.74**	-1.165***	-1.76**	-1.051**	-0.853*
	(0.033)	(0.016)	(0.033)	(0.021)	(0.321)
HC_{it}	-0.156**	-0.158**	-0.159**	-0.121*	-0.077**
	(0.030)	(0.028)	(0.022)	(0.09)	(0.023)
TOP_{it}	8.781***	8.842***	8.477***	8.051***	8.600***
	(0.000)	(0.000)	(0.001)	(0.002)	(0.001)
ODA_{it}	---------	---------	--------	---------	36.76**
					(0.022)
ED_{it}	---------	---------	---------	4.34**	---------
				(0.026)	
S_{it}	---------	0.127***	---------	0.130***	0.045*
		(0.003)		(0.002)	(0.053)
INV_{it}	21.91***	---------	22.34***	---------	---------
	(0.001)		(0.001)		
$ODAS_{it}$	0.007***	---------	---------	---------	0.004**
	(0.001)				(0.040)
EDS_{it}	---------	0.0001**	-0.0003**	0.0001**	---------
		(0.059)	(0.031)	(0.050)	
Number of observations	374	374	374	374	374
Number of countries	17	17	17	17	17
Number of instruments	28	28	28	29	29
Sargan P-Value	0.89	0.92	0.93	0.92	0.90

i) **P-value is in parenthesis.**
ii) **Equations are corrected for heteroscedasticity where needed.**
iii) *****, **,* shows level of significance at 1%, 5%, and 10% respectively.**

Table 5.1(a) and 5.1(b) presents the empirical findings of our empirical model along with the set of control variables where, we regress $GGDP_{it}$ (Growth of real GDP) on ODA_{it} (Official Development Assistance as a percent of GDP) and ED_{it} (External Debt as a percent of GDP) along with the set of control variables. We model growth dynamically by introducing lag dependent

variable ($GGAP_{it-1}$) as an explanatory variable. The coefficient of the lag of dependent variable is appearing in model with expected positive sign which is statistically significant. This indicate that current GGDP depends on its lag GDP and there is no tendency for conditional convergence that in sample countries the poor economies are acceleratory grow compared to their rich counterpart.

In our specification of model (column two), the interest variable of our study, that ODA_{it} (ODA as a percentage of GDP) enters the model with expected positive sign that are statistically significant and positively contributing to $GGDP_{it}$.[13] Which indicates that ODA plays a significant role in the growth process of the sample countries. Our result is in line with the findings of Hameed et al. (2008), Asteriou (2009); and Javaid and Qayyum (2011) that FA ought to increase economic growth and plays a significant role in saving and investment decisions and filling the gap between savings and investment of developing countries which in turn affect the growth process.

The coefficient of our control variable HC_{it} (HC in gross percentage) that enters in specification one is statistically significant and with unexpected negative sign at five and ten percent level of significance. One possible justification is that we have used primary enrollment as a proxy of human capital, and to some extend it is an investment. It may have lag effect but right now it is effecting the economic growth negatively. The coefficient of our second control variable $GPOP_{it}$ that enters in specification one holds negative sign, which is statistically significant as well. Findings indicates that growth in population impose negative impact on economic growth. Results are in line with the findings of Moreira (2005). Also, increasing labor force is not the main ingredient of economic growth in the countries under consideration.

[13] The coefficient of ODA_{it} is too high in all specifications because it is basically a ratio of ODA and GDP and when we apply estimation on ratios the resultant coefficient is always high. Same pattern can be observed for ED_{it}.

Control variable $TOP_{i,t}$(TO as a percentage of GDP) that enters in specification one is statistically significant and with expected positive sign indicates that economic growth in these countries is largely determined by production of goods in the country and level of exports. Our findings are in line with the study conducted by Feeny (2005). Which indicates that TO and GDP growth moves parallel and the countries which are more liberalized and have good trade policies can accelerate long run economic growth. Trade openness creates more opportunities to diffusion of new technologies In addition, openness in trade relaxes restrictions caused by foreign exchange as mostly observed in case of developing countries.

Control variable S_{it} (Savings as a percentage of GDP) appearing in specification one with expected positive sign which is statistically significant. Our study supports the findings of Ahmed and Wahab (2011) which argued that savings and GDP are positively related with each other.

Onwards from column three to eleven, we carry out the sensitivity analysis. It is important to clarify that $GGDP_{t-1}$, $GPOP_{it}$ HC_{it} and TOP_{it} are common to all specifications. In column three (Table 5.1(a)) all of the variables come out with the same results alike to the results of specification one. But in specification two (column three), we replace our variable of interest ODA_{it} (Official Development Assistance as a Percent of GDP) by ED_{it} (External Debt as a Percent of GDP) which enter the model significantly and with positive sign. The result revealed that an increase in ED enhance economic growth in selected developing countries. The one possible justification is that as most of these countries face three gaps (saving-investment gap, exports-import gap, and fiscal gap) ED prove beneficial for economic growth as it helps to minimize these gaps in selected Asian countries. Our findings are in line with the findings with some country specific studies. For instance, Sulaiman and Azeez (2012) investigated the impact of ED in case of Nigeria and came

up with the same findings that ED and economic growth move parallel. The findings of our study somewhat supports the findings of Siddiqui and Malik (2001) . The study reports mixed evidence regarding ED to economic growth relationship as it found positive relationship in case of India and Sri-Lanka while negative for Pakistan.

In specification three, column four (Table 5.1(a)), we replace our variable of interest ED_{it} (External Debt as a Percent of GDP) by ODA_{it} (Official Development Assistance as a Percent of GDP) again. Which entered the model significantly and with positive sign. Also, we replace S_{it} (Savings as a Percent of GDP) by INV_{it} (Investment as a Percent of GDP). Empirical result shows INV_{it} (investment as a percentage of GDP) entered the model with positive sign and is statistically significant at 1 percent level of significance. But INV_{it} is more statistically significant as compare to S_{it} for all the cases. Which means that investment enhances economic growth more than savings. Our finding is in line with the findings of Hansen and Tarp (2001) and Siddique et al. (2015) which argues that foreign aid in all its forms increase economic growth via savings and investment.

From column 6 to column 10 of model, we include interactive term of $ODAS_{it}$ (Official Development Assistance and Savings to GDP) and interactive terms of EDS_{it} (External Debt and Savings to GDP) to the set of other control variables.

Our first interactive terms $ODAS_{it}$ in specification (5, 6, and 10) appears with highly significant and expected positive sign in all the cases. Which indicates that savings and FA together are very helpful to increase economic growth of the countries under consideration. As, savings and FA both enhances economic growth so it can be said that FA works as a complement of savings. On the other hand, Findings of our second interactive term in specification (3, 4, and 5) of table 5.1(b) indicates that EDS_{it} has positive sign and significant in two out of three cases, which indicates that

ED and savings helps to improve economic growth and ED works as a complement of savings. While specification 8 indicates that EDS_{it} is entered in model with negative sign and is significant as well. Which indicates that ED and S are substitutes of each other.

As explained earlier, there is another way to find out the relationship between foreign assistance (FA and ED) and savings, that we will compare the signs of coefficients of ODA_{it} and $ODAS_{it}$. If the signs of both terms are similar, than we can conclude that both are both variables behaves as complements. While if the signs of both terms are opposite, than we can say that both variables are substitutes of each other.

Here, according to specification 10, the signs of α_1 and α_8 are similar. So, we can say that savings and FA behaves as complements for each other. Similarly, sings of $\alpha_2$and α_9 in specification 9 are similar. So, it can be concluded that ED and savings behaves as complements.

The overall results may be summarized as irrespective of all other factors, foreign assistance performs a vital role in economic growth of South Asian countries. Also, Savings acts as complements for ED and FA.

Chapter 6

Conclusion and Policy Recommendations

6.1. Conclusion

The main objectives of the study were to investigate the impact of foreign assistance on economic growth and to investigate that whether foreign assistance behaves as a substitute of saving or not. The empirical analyses have been carried out for seventeen developing countries over the period 1990-2013. The empirical model has estimated using GMM estimation technique. The key findings of the study are briefly summarized as follows.

The findings of the study revealed that both determinant of foreign assistance that is FA and ED explain positive economic growth of the sample countries. The results indicate that the selected developing countries have highly reliance on foreign assistance to fulfill their basic economic objectives and to increase overall economic growth. The other core results support the positive implications of physical capital, savings, and trade openness on the overall economic growth.

The other key finding of the study is that interactive term of official development assistance through savings show relatively stronger effect on economic growth compared with individual terms of official development assistance. This result indicates complementarity between FA and savings. Similarly, ED also show a complementary behavior with savings, as the interactive term of external debt (ED) through savings show relatively stronger effect on economic growth compared with individual terms of ED. Hence, it can be safely concluded that foreign assistance and savings acts as complements and both helps to increase economic growth in these selected developing countries.

The overall impression that one can draw from these findings is that foreign assistance holds a beneficial impacts on economic growth of developing countries. That findings further reveal that foreign assistance has been instrumental in making achievements at micro and macro levels in the process of economic growth like foreign assistance narrows the gaps faced by most of the developing countries. So, foreign assistance has to be wisely spent so that it can effectively spur economic growth.

6.2. Policy Recommendations

Based on the findings of the study presented in chapter five, followings are some recommendations that may direct policy about foreign assistance, saving and investment.

- First, there is a need to implement appropriate policy measures in order to achieve positive impact of foreign assistance on economic growth through Savings/Investment as the findings of study revealed that foreign assistance and savings are complementing each other
- Second, to attain high economic growth, there is a need to design trade liberalization policies to enhance and sustain economic growth

6.3. Limitations of the Study

Even though we have estimated the possible comprehensive empirical model, however there are some limitations that may be overcome in the future research.

- First, due to time constraint, the empirical analyses have been carried out for the overall 17 lower income countries. The analysis should be carried out regional wise and the sample should be extended.

6.4. Future Research

The study has not considered the role of monetary and fiscal policies in the growth effectiveness of foreign assistance. Hence, it should be suggested to consider the role of monetary and fiscal policies of the assistance receiving country while analyzing the foreign assistance and growth relationship.

References

Adams, S., & Atsu, F. (2014). Aid dependence and economic growth in Ghana. *Economic Analysis and Policy.*

Addison et al. (2005). Aid to Africa: an unfinished agenda. *Journal of International Development, 17*(8), 989-1001.

Aghion et al. (2006). *When does domestic saving matter for economic growth?* Retrieved from

Ahmed, V., & Wahab, M. A. (2011). Foreign assistance and economic growth: Evidence from Pakistan 1972-2010.

Albiman, M. M., Ranjanee, S., & Ismail, N. W. (2014). Review of Theoretical and Empirical Literatures on the Role of Foreign Aid to Developing Countries. *Journal of Economics and Sustainable Development, 5*(27), 192-196.

Al-Khaldi, M. D. (2008). Impact of foreign aid on economic development in Jordan (1990-2005). *Journal of Social Sciences, 4*(1), 16.

Al-Refai, M. F. (2015). Debt and Economic Growth in Developing Countries: Jordan as a Case Study. *International Journal of Economics and Finance, 7*(3), p134.

Alesina, A., & Dollar, D. (2000). Who gives foreign aid to whom and why? *Journal of economic growth, 5*(1), 33-63.

Ali et al. (2014). Foreign Capital and Investment in Pakistan: A Cointegration and Causality Analysis. *Journal of Basic and Applied Scientific Research, 4*(4), 217-226.

Anoruo, E., & Ahmad, Y. (2001). Causal relationship between domestic savings and economic growth: Evidence from seven African countries. *African Development Review, 13*(2), 238-249.

Arazmuradov, A. (2012). Foreign aid, foreign direct investment, and domestic investment nexus in landlocked economies of Central Asia. *Economic Research Guardian, 2*(1), 129-151.

Asteriou, D. (2009). Foreign aid and economic growth: New evidence from a panel data approach for five South Asian countries. *Journal of policy modeling, 31*(1), 155-161.

Atique, R., & Malik, K. (2012). Impact of domestic and external debt on the economic growth of Pakistan. *World Applied Sciences Journal, 20*(1), 120-129.

Audu, I. (2004). The impact of external debt on economic growth and public investment: The case of Nigeria. *African Institute for Economic Development and Planning (IDEP), Dakar*.

Ayadi, F. S., & Ayadi, F. O. (2008). The impact of external debt on economic growth: A comparative study of Nigeria and South Africa. *Journal of Sustainable Development in Africa, 10*(3), 234-264.

Bacha, E.L. (1990). A three gap models of foreign transfers and the GDP growth rate in developing countries. *Journal of Development Economics*, 32, 279-296.

Basnet, H. C. (2013). Foreign aid, domestic savings, and economic growth in South Asia. *The International Business & Economics Research Journal (Online), 12*(11), 1389.

Bhandari et al. (2007). Foreign aid, FDI and economic growth in East European countries. *Economics Bulletin, 6*(13), 1-9.

Bhattarai, B. P. (2009). Foreign aid and growth in Nepal: an empirical analysis. *The Journal of Developing Areas, 42*(2), 283-302.

Bhavan et al. (2010). Growth effect of aid and its volatility: An individual country study in South Asian economies. *Business and Economic Horizons, 3*(3), 1-9.

Bittencourt, M. (2013). *Determinants of government and external debt: Evidence from the young democracies of South America*. Retrieved from

Boone, P. (1996). Politics and the effectiveness of foreign aid. *European Economic Review, 40*(2), 289-329.

Burke, P. J., & Ahmadi-Esfahani, F. Z. (2006). Aid and growth: A study of South East Asia. *Journal of Asian Economics, 17*(2), 350-362.

Burnside, C., & Dollar, D. (2000). Aid, policies, and growth. *American Economic Review*, 847-868.

Burnside, C., & Dollar, D. (2004a). Aid, policies, and growth: Reply. *American Economic Review, 94*(3), 781-784.

Burnside, C., & Dollar, D. (2004b). Aid, policies, and growth: reply. *The American Economic Review, 94*(3), 781-784.

Butt, R., & Javid, A. Y. (2013). *Foreign aid and the fiscal behaviour of government of Pakistan*. Retrieved from

Chauvet, L., & Guillaumont, P. (2004). Aid and growth revisited: Policy, economic vulnerability and political instability. *Toward Pro-Poor Policies Aid, Institutions, and Globalization*.

Chauvet, L., & Guillaumont, P. (2008). *Aid, volatility and growth again: When aid volatility matters and when it does not* (9292301322). Retrieved from

Checherita-Westphal et al. (2012). The impact of high government debt on economic growth and its channels: An empirical investigation for the euro area. *European Economic Review, 56*(7), 1392-1405.

Chenery, H. B. and Strout, A. M. (1966). Foreign assistance and economic development. *American Economic Review,* 56, 679-733

Chowdhury, M., & Das, A. (2011). Aid-Growth nexus in South Asia: Evidence from time series and panel cointegration. *Research in Applied Economics, 3*(1).

Christofferson, B. (2010). Aid effectiveness in Sub-Saharan Africa and South and Southeast Asia: An analysis of substantive measures of development.

Clemens et al. (2004). Counting chickens when they hatch: The short term effect of aid on growth. *Center for Global Development working paper*(44).

Collier, P., & Dollar, D. (2002). Aid allocation and poverty reduction. *European Economic Review, 46*(8), 1475-1500.

Cunningham, R. T. (1993). The effects of debt burden on economic growth in heavily indebted developing nations. *Journal of economic development, 18*(1), 115-126.

Dalgaard, C.-J., & Hansen, H. (2001). On aid, growth and good policies. *Journal of development Studies, 37*(6), 17-41.

Dalgaard, C. J., Hansen, H., & Tarp, F. (2004). On the empirics of foreign aid and growth*. *The Economic Journal, 114*(496), F191-F216.

Desai, R. M., & Kharas, H. (2010). *The determinants of aid volatility*: Brookings Institution, Global Economy and Develpment.

Dietrich, S., & Wright, J. (2012). *Foreign aid and democratic development in Africa* (9292304836). Retrieved from

Djankov, S., Garcia-Montalvo, J., & Reynal-Querol, M. (2006). Does foreign aid help? *Available at SSRN 896550.*

Dollar, D., & Levin, V. (2006). The increasing selectivity of foreign aid, 1984–2003. *World development, 34*(12), 2034-2046.

Doucouliagos, H., & Paldam, M. (2008). Aid effectiveness on growth: A meta study. *European journal of political economy, 24*(1), 1-24.

Dowling, J. M., & Hiemenz, U. (1983). Aid, savings, and growth in the Asian region. *The Developing Economies, 21*(1), 3-13.

Durbarry et al. (1998). *New evidence on the impact of foreign aid on economic growth*: Centre for Research in Economic Development and International Trade, University of Nottingham Nottingham.

Durbarry, R., Gemmell, N., & Greenaway, D. (1998). *New evidence on the impact of foreign aid on economic growth*: Centre for Research in Economic Development and International Trade, University of Nottingham.

Easterly, W. (2003). Can foreign aid buy growth? *Journal of Economic Perspectives*, 23-48.

Easterly, W., Levine, R., & Roodman, D. (2003). *New data, new doubts: A comment on Burnside and Dollar's" aid, policies, and growth"(2000).* Retrieved from

Economides, G., Kalyvitis, S., & Philippopoulos, A. (2008). Does foreign aid distort incentives and hurt growth? Theory and evidence from 75 aid-recipient countries. *Public Choice, 134*(3-4), 463-488.

Ekanayake, E., & Chatrna, D. (2010). The effect of foreign aid on economic growth in developing countries. *Journal of International Business and Cultural Studies, 3*(2).

Ellahi, N., & Ahmad, M. (2011). *Testing the joint impact of foreign aid and foreign direct investment on overtime economic growth of Pakistan.* Paper presented at the International Conference on Business and Economic Research. Langkawi Malaysia: World Research Agency.

Eris, M. (2008). Foreign aid and growth. *Economics Bulletin, 15*(14), 1-14.

Feeny, S. (2005). The impact of foreign aid on economic growth in Papua New Guinea. *Journal of development Studies, 41*(6), 1092-1117.

Ferreira, I. A., & Simoes, M. C. (2013). Aid and growth: A comparative study between Sub-Saharan Africa and Asia. *Applied Econometrics and International Development, 13*(1), 113-132.

Fry, M. J. (1978). Money and capital or financial deepening in economic development? *Journal of money, credit and banking*, 464-475.

Gomanee et al. (2005). *Aid and growth in sub-Saharan Africa: accounting for transmission mechanisms*: Research Paper, UNU-WIDER, United Nations University (UNU).

Griffin, K. (1970). Foreign capital, domestic savings and economic development. *Bulletin of the Oxford University Institute of Economics & Statistics, 32*(2), 99-112.

Gupta, S., Clements, B. J., Pivovarsky, A., & Tiongson, E. R. (2003). Foreign Aid and Revenue Response Does the Composition of Aid Matter?

Hameed, A., Ashraf, H., & Chaudhary, M. A. (2008). External debt and its impact on economic and business growth in Pakistan. *International Research Journal of Finance and Economics, 20*, 132-140.

Hansen, H. (2002). *The impact of aid and external debt on growth and investment*: Centre for Research in Economic Development and International Trade, University of Nottingham.

Hansen, H., & Tarp, F. (2001). Aid and growth regressions. *Journal of development Economics, 64*(2), 547-570.

Harrod, R. F. (1939). An Essay in Dynamic Theory. *The Economic Journal,* 49, 145–33

Headey, D. (2008). Geopolitics and the effect of foreign aid on economic growth: 1970–2001. *Journal of International Development, 20*(2), 161-180.

Hokmeng, H., & Moolio, P. (2015). The Impact of Foreign Aid on Economic Growth in Cambodia: A Co-integration Approach. *KASBIT Journal of Management & Social Science, 8*(1), 4-25.

Hong, K. K. Sale Strategies of Small and Medium Enterprises in Cambodia: A Comparative Analysis.

Irandoust, M., & Ericsson, J. (2005). Foreign aid, domestic savings, and growth in LDCs: An application of likelihood-based panel cointegration. *Economic Modelling, 22*(4), 616-627.

Ishfaq, M. (2004). *Aid effectiveness, debt capacity and debt management in the economy of Pakistan.* Quaid-i-Azam University, Islamabad.

Islam, A. (1992). Foreign aid and economic growth: an econometric study of Bangladesh. *Journal of the History of Economic Thought, 24*(5), 541-544.

Islam, M. N. (2003). Political regimes and the effects of foreign aid on economic growth. *The Journal of Developing Areas, 37*(1), 35-53.

Jadoon et al. (2014). Finding the impact of foreign debt servicing on per capita income growth rate: A case study of Pakistan. *African Journal of Marketing Management, 6*(4), 39-48.

Javid, M., & Qayyum, A. (2011). Foreign aid and growth nexus in Pakistan: The role of macroeconomic policies. *Working Papers & Research Reports, 2011.*

Juselius et al. (2014). The Long-Run Impact of Foreign Aid in 36 African Countries: Insights from Multivariate Time Series Analysis*. *Oxford Bulletin of Economics and Statistics, 76*(2), 153-184.

Kaosar, A., & Idrees, M. (2010). Testing the Aid-Growth nexus for South Asia, 1971-2005. *Applied Econometrics and International Development, 10*(2), 213-222.

Karras, G. (2006). Foreign aid and long-run economic growth: empirical evidence for a panel of developing countries. *Journal of International Development, 18*(1), 15-28.

Khan, M. A., & Ahmed, A. (2007). Foreign aid—blessing or curse: Evidence from Pakistan. *The Pakistan Development Review*, 215-240.

Kumara, H., & Cooray, N. S. (2013). Public Debt and Economic Growth in Sri Lanka: Is There Any Threshold Level for Pubic Debt? *Economics & management series*(2013), 1-21.

Lamb, M. I. (2010). Aid, growth, and poverty reduction: A study of the Dominican Republic from 1970-2007.

Lee, J. J. (2011). An Outlook for Cambodia's Garment Industry in the Post-Safeguard Policy Era. *Asian survey*, *51*(3), 559-580.

Lensink, R., & Morrissey, O. (2000). Aid instability as a measure of uncertainty and the positive impact of aid on growth. *The Journal of Development Studies, 36*(3), 31-49.

Lensink, R., & White, H. (2001). Are there negative returns to aid? *Journal of development Studies, 37*(6), 42-65.

Loxley, J., & Sackey, H. A. (2008). Aid effectiveness in Africa. *African Development Review, 20*(2), 163-199.

Lu, S., & Ram, R. (2001). Foreign aid, government policies, and economic growth: Further evidence from cross-country panel data for 1970-1993. *Economia Internazionale/International Economics, 54*(1), 15-29.

MacGillivray, M., & Morrissey, O. (2001). *Fiscal effects of aid*. Retrieved from

Mallik, G. (2008). Foreign aid and economic growth: A cointegration analysis of the six poorest African countries. *Economic Analysis and Policy, 38*(2), 251.

Minoiu, C., & Reddy, S. G. (2010). Development aid and economic growth: A positive long-run relation. *The Quarterly Review of Economics and Finance, 50*(1), 27-39.

Mitra, R., & Hossain, M. S. (2013). Foreign aid and economic growth in the Philippines. *Economics Bulletin, 33*(3), 1706-1714.

Mohamed, M. A. A. (2005). The impact of external debts on economic growth: an empirical assessment of the Sudan: 1978-2001. *Eastern Africa Social Science Research Review, 21*(2), 53-66.

Mohan, R. (2006). Causal relationship between savings and economic growth in countries with different income levels. *Economics Bulletin, 5*(3), 1-12.

Mohey-ud-din, G. (2005). Impact of foreign aid on economic development in Pakistan [1960-2002].

Moreira, S. B. (2005). Evaluating the impact of foreign aid on economic growth: A cross-country study.

Morrissey, O. (2001). Does aid increase growth? *Progress in Development Studies, 1*(1), 37-50.

Njoupouognigni, M. (2010). Foreign aid, foreign direct investment and economic growth in Sub-Saharan Africa: Evidence from pooled mean group estimator (PMG). *International Journal of Economics and Finance, 2*(3), 39.

Nowak-Lehmann et al. (2012). Does foreign aid really raise per capita income? A time series perspective. *Canadian Journal of Economics/Revue canadienne d'économique, 45*(1), 288-313.

Oechslin, M. (2006). *Foreign aid, political instability, and economic growth*: Inst. for Empirical Research in Economics.

Oleksandr, D. (2003). *Nonlinear impact of external debt on economic growth: the Case of Post-Soviet Countries.* Economics Education and Research Consortium.

Oloyede, B. (2002). Principles of International Finance: Forthright Educational Publisher, Lagos.

Papanek, G. F. (1973). Aid, foreign private investment, savings, and growth in less developed countries. *The Journal of Political Economy*, 120-130.

Pattillo, C. A., Poirson, H., & Ricci, L. A. (2002). *External debt and growth*: International Monetary Fund.

Pattillo et al. (2002). *External debt and growth*: International Monetary Fund.

Rajan, R. G., & Subramanian, A. (2008). Aid and growth: What does the cross-country evidence really show? *The Review of economics and Statistics, 90*(4), 643-665.

Ram, R. (2004). Recipient country's 'policies' and the effect of foreign aid on economic growth in developing countries: additional evidence. *Journal of International Development, 16*(2), 201-211.

Ramzan, M., & Ahmad, E. (2014). External debt growth nexus: Role of macroeconomic polices. *Economic Modelling, 38*, 204-210.

Safdari et al. (2011). External debt and economic growth in Iran. *Journal of economics and international finance, 3*(5), 322.

Sahoo et al. (2001). Savings and Economic Growth in India:The Long-run Nexus/Epargne Et Croissance Economique En Inde: Li Lien A Lond Terme *Savings and Development*, 67-80.

Sahoo, K., & Sethi, N. (2013). Effect of Foreign Aid on Economic Growth and Development in India: An Empirical Analysis. *South Asian Journal of Management*, *20*(1), 114.

Shafiullah, M. (2011). Foreign aid and its impact on income inequality. *International Review of Business Research Papers, 7*(2), 91-105.

Shaikh, F. M. (2010). *Causality relationship between foreign direct investments, trade and economic growth in Pakistan.* Paper presented at the International Conference on Applied Economics.

Shields, M. P. (2007). *Foreign aid and domestic savings: the crowding out effect.* Retrieved from

Siddique, A., Selvanathan, E., & Selvanathan, S. (2015). The impact of external debt on economic growth: Empirical evidence from highly indebted poor countries. *Griffith Business School, Griffith University*, 1-31.

Siddiqui, R., & Malik, A. (2001). Debt and economic growth in South Asia. *The Pakistan Development Review*, 677-688.

Smith, A. (1776). An inquiry into the nature and causes of the wealth of nations: Volume One.

Soludo, C. C. (2003). Debt poverty and inequality. *Okonjo-Iweala, Soludo and Mulitar (Eds.), The Debt trap in Nigeria*, 23-74.

Sulaiman, L., & Azeez, B. (2012). Effect of external debt on economic growth of Nigeria. *Journal of Economics and Sustainable Development, 3*(8), 71-79.

Taylor, L., (1990). Foreign resource flows and developing country growth: A three-gap analysis. In: McCarthy, D. (Ed.), *Problems of developing countries in the 1990s* (pp 55-90).Washington DC, USA: World Bank. Retrieved from http.//www.wider.unu/publications/working –papers/…/RFA8.pdf in 2 August,2012.

Teboul, R., & Moustier, E. (2001). Foreign aid and economic growth: the case of the countries south of the Mediterranean. *Applied Economics Letters, 8*(3), 187-190.

Uneze, E. (2010). Testing the impact of foreign aid on domestic private investment in West Africa. *African Review of Money Finance and Banking*, 59-84.

Uzun, A., Karakoy, C., Kabadayi, B., & Emsen, O. S. (2012). The impacts of external debt on economic growth in transition economies. *Chinese business review, 11*(5).

Waheed, A., (2004). Foreign capital inflows and economic growth of developing countries: a critical survey of selected empirical studies. *Journal of Economic Cooperation, 25(1),* 1-36.

Were, M. (2001). The impact of external debt on economic growth in Kenya: An empirical assessment: *WIDER Discussion Papers//World Institute for Development Economics (UNU-WIDER).*

APPENDICES

APPENDIX A

Table 6. Comparative Performance of GGDP, ODA/GDP and ED/GDP From 1990-2014

Countries	GGDP					ODA/GDP					ED/GDP				
	1990-94	1995-99	2000-04	2005-09	2010-14	1990-94	1995-99	2000-04	2005-09	2010-14	1990-94	1995-99	2000-04	2005-09	2010-14
Armenia	1.4	5.33	10.6	6.71	4.4	0.05	0.13	0.2	0.04	0.03	-0.02	0.38	0.64	0.38	0.75
Bangladesh	4.59	5	5.43	6.14	6.14	0.06	0.03	0.02	0.02	0.01	0.42	0.36	0.33	0.26	0.2
Bhutan	4.4	6.38	7.88	8.66	6.68	0.23	0.18	0.12	0.09	0.08	0.35	0.38	0.68	0.67	0.67
Cambodia	8.45	6.87	8.46	8.2	6.94	0.09	0.11	0.1	0.07	0.06	1.13	0.7	0.68	0.4	0.37
Georgia	2.4	6.05	5.8	5.97	5.73	0.02	0.08	0.07	0.06	0.04	0.24	0.48	0.55	0.46	0.82
India	4.69	6.84	5.65	8.14	7.21	0.1	0.01	0.002	0.01	0.001	0.3	0.23	0.19	0.17	0.2
Indonesia	7.99	1.68	4.57	5.63	6.18	0.01	0.01	0.01	0.04	0.006	0.6	0.89	0.69	0.37	0.27
Kyrgyz Rep	1.03	3.07	4.95	4.55	3.98	0.03	0.16	0.12	0.08	0.07	1.3	0.82	1.22	0.83	0.89
Lao PDR	6.12	6.42	5.97	7.73	8.27	0.15	0.19	0.14	0.09	0.05	1.67	1.48	1.37	1.02	0.79
Mongolia	-4.4	3.78	5.29	6.73	12	0.1	0.18	0.16	0.06	0.04	0.26	0.56	0.82	0.48	1.29
Nepal	5.43	4.25	3.94	4.17	4.21	0.11	0.08	0.06	0.06	0.04	0.5	0.54	0.49	0.34	0.21
Pakistan	4.53	3.4	4.33	4.64	3.02	0.03	0.01	0.02	0.01	0.01	0.51	0.5	0.43	0.3	0.29
Philippines	1.86	3.64	4.52	4.38	6.31	0.02	0.01	0.01	0.003	0.001	0.66	0.62	0.72	0.42	0.26
Sri-Lanka	5.58	4.94	3.96	6.03	7.46	0.07	0.03	0.02	0.02	0.01	0.69	0.59	0.55	0.42	0.38
Tajikistan	1.43	3.68	10.1	6.64	7.2	0.01	0.1	0.13	0.08	0.06	0.3	0.91	0.96	0.44	0.48
Ukraine	1.23	3.58	8.36	1.08	2.86	0.003	0.005	0.007	0.004	0.004	0.18	0.27	0.51	0.57	0.83
Vietnam	7.32	7.51	6.74	6.54	5.83	0.03	0.04	0.04	0.03	0.02	2.37	0.94	0.36	0.29	0.38

APPENDIX B

H_0=Constant variance (P>5%)

Table 1(a). Breusch-Pagan Test for Heteroscedasticity

	S_1	S_2	S_3	S_4	S_5
Chai²	14.78	18.84	11.81	9.99	13.25
Probability of Chai²	0.000	0.000	0.000	0.000	0.000

H_0= Constant variance (P>5%)

Table 1(b). Breusch-Pagan Test for Heteroscedasticity

	S_6	S_7	S_8	S_9	S_10
Chai²	8.04	12.25	7.15	16.07	11.97
Probability of Chai²	0.002	0.000	0.003	0.000	0.000

APPENDIX C

H_0= Fixed effects are not efficient estimates

Table 2(a). Hausman Specification Test

	S_1	S_2	S_3	S_4	S_5
Chai²	11.73	9.28	21.02	10.95	6.64
Probability of Chai²	0.038	0.090	0.000	0.059	0.156

H_0= Fixed effects are not efficient estimates

Table 2(b). Hausman Specification Test

	S_6	S_7	S_8	S_9	S_10
Chai²	6.62	3.19	5.82	7.12	80.34
Probability of Chai²	0.157	0.526	0.213	0.211	0.000

APPENDIX D

H_0= Cross-sectional fixed effects

Table 3(a). Redundant Cross-Section Fixed Effect Test

	S_1	S_2	S_3	S_4	S_5
F	3.39	3.51	3.79	3.13	3.48
Probability of F	0.000	0.001	0.013	0.0000	0.001

H_0= Cross-sectional fixed effects

Table 3(b). Redundant Cross-Section Fixed Effect Test

	S_6	S_7	S_8	S_9	S_10
F	4.01	3.92	3.25	4.12	3.88
Probability of F	0.024	0.018	0.000	0.027	0.016

H_0= Period fixed effect

Table 4(a). Redundant Period Fixed Effect Test

	S_1	S_2	S_3	S_4	S_5
F	11.73	6.75	10.43	6.40	6.64
Probability of F	0.038	0.000	0.023	0.000	0.000

H_0= Period fixed effect

Table 4(b). Redundant Period Fixed Effect Test

	S_6	S_7	S_8	S_9	S_10
F	6.62	5.89	6.89	11.12	10.99
Probability of F	0.000	0.000	0.001	0.031	0.024

H_0= Cross-sectional and period effect

Table 5(a). Redundant Cross-Section and Period Fixed Effect Test

	S_1	S_2	S_3	S_4	S_5
Cross-section/Period F	6.87	5.89	6.50	6.84	6.64
Probability of F	0.001	0.000	0.000	0.001	0.000

H_0= Cross-sectional and period effect

Table 5(b). Redundant Cross-Section and Period Fixed Effect Test

	S_6	S_7	S_8	S_9	S_10
Cross-section/Period F	7.32	7.19	7.82	7.12	6.99
Probability of F	0.014	0.012	0.018	0.010	0.007

APPENDIX E

H_0= No serial correlation

Table 6(a). Serial Correlation Test

	S_1	S_2	S_3	S_4	S_5
F-Stat	-2.05	-2.57	-2.30	-2.58	-1.28
P-Value	0.04	0.01	0.02	0.01	0.19

H_0= No serial correlation

Table 6(b). Serial Correlation Test

	S_6	S_7	S_8	S_9	S_10
F-Stat	-1.82	-2.06	-2.58	-2.15	-2.04
P-Value	0.04	0.03	0.01	0.01	0.04

APPENDIX F

Table 7. Variance Inflation Factor (VIF) Test for Multicollinearity

Variable	VIF	1/VIF
ODA	1.01	0.9926
ED	1.03	0.9701
GPOP	1.00	0.9978
S	1.00	0.9961
INV	1.04	09636
HC	1.01	0.9926
TOP	1.00	0.9961
ODAS	1.03	0.9701
EDS	1.01	0.9926

APPENDIX C

H_0= Fixed effects are not efficient estimates

Table 2(a). Hausman Specification Test

	S_1	S_2	S_3	S_4	S_5
Chai²	11.73	9.28	21.02	10.95	6.64
Probability of Chai²	0.038	0.090	0.000	0.059	0.156

H_0= Fixed effects are not efficient estimates

Table 2(b). Hausman Specification Test

	S_6	S_7	S_8	S_9	S_10
Chai²	6.62	3.19	5.82	7.12	80.34
Probability of Chai²	0.157	0.526	0.213	0.211	0.000

APPENDIX D

H_0= Cross-sectional fixed effects

Table 3(a). Redundant Cross-Section Fixed Effect Test

	S_1	S_2	S_3	S_4	S_5
F	3.39	3.51	3.79	3.13	3.48
Probability of F	0.000	0.001	0.013	0.0000	0.001

H_0= Cross-sectional fixed effects

Table 3(b). Redundant Cross-Section Fixed Effect Test

	S_6	S_7	S_8	S_9	S_10
F	4.01	3.92	3.25	4.12	3.88
Probability of F	0.024	0.018	0.000	0.027	0.016

H_0= Period fixed effect

Table 4(a). Redundant Period Fixed Effect Test

	S_1	S_2	S_3	S_4	S_5
F	11.73	6.75	10.43	6.40	6.64
Probability of F	0.038	0.000	0.023	0.000	0.000

H_0= Period fixed effect

Table 4(b). Redundant Period Fixed Effect Test

	S_6	S_7	S_8	S_9	S_10
F	6.62	5.89	6.89	11.12	10.99
Probability of F	0.000	0.000	0.001	0.031	0.024

H_0= Cross-sectional and period effect

Table 5(a). Redundant Cross-Section and Period Fixed Effect Test

	S_1	S_2	S_3	S_4	S_5
Cross-section/Period F	6.87	5.89	6.50	6.84	6.64
Probability of F	0.001	0.000	0.000	0.001	0.000

H_0= Cross-sectional and period effect

Table 5(b). Redundant Cross-Section and Period Fixed Effect Test

	S_6	S_7	S_8	S_9	S_10
Cross-section/Period F	7.32	7.19	7.82	7.12	6.99
Probability of F	0.014	0.012	0.018	0.010	0.007

APPENDIX E

H_0= No serial correlation

Table 6(a). Serial Correlation Test

	S_1	S_2	S_3	S_4	S_5
F-Stat	-2.05	-2.57	-2.30	-2.58	-1.28
P-Value	0.04	0.01	0.02	0.01	0.19

H_0= No serial correlation

Table 6(b). Serial Correlation Test

	S_6	S_7	S_8	S_9	S_10
F-Stat	-1.82	-2.06	-2.58	-2.15	-2.04
P-Value	0.04	0.03	0.01	0.01	0.04

APPENDIX F

Table 7. Variance Inflation Factor (VIF) Test for Multicollinearity

Variable	VIF	1/VIF
ODA	1.01	0.9926
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GPOP	1.00	0.9978
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INV	1.04	09636
HC	1.01	0.9926
TOP	1.00	0.9961
ODAS	1.03	0.9701
EDS	1.01	0.9926