INSTITUTIONS AND ECONOMIC GROWTH: THE STUDY OF SELECTED SOUTH-ASIAN ECONOMIES AND PAKISTAN

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CERTIFICATE

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LIST OF ACRONYMS

ADF	Augmented Dickey Fuller
ARDL	Auto Regressive Distributive Lagged Model
DPI	Database of Political Institutions
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GMM	Generalized Method of Moment
IBO	International Business Organizations
ICRG	International Country Risk Guidance Index
NIE	New Institutional Economics
OLS	Ordinary Least Square
SWD	Satisfaction with Democracy
WDI	World Development Indicators

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DEDICATION

Dedicated

To

My Beloved Parents, Brothers and Sisters, Who Support me all times in

My Life and Career beyond any Limits and their special prayers bestowed on me a completion of very successful career.

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ABSTRACT

The objective of this research is to investigate the relationship between institutions and economic growth in case of South Asia and Pakistan. For this purpose, this research uses economic growth as dependent variable and government stability as a proxy for institutions. Similarly, domestic investment, human capital, infrastructure, inflation and financial development are used as control variables. Using the time span of 1990-2014, this research resorts to Driscoll-Kraay standard errors approach for panel data analysis. The results reveal that government stability has an insignificant impact on the economic growth due to inconsistent policies of South Asia. Similarly, using ADF test for checking order of integration, two variables government stability and inflation came integrated of order zero or level stationary. Therefore, using ARDL, the results show that government stability has a +ve and significant impact on the economic growth of Pakistan. Moreover, ECT (-1) term is -0.97 and significant which indicates that there exists a long run relationship between the variables. Further, the estimates are normal having no problems of heteroscedasticity and autocorrelation.

Key Words: *Government Stability, Institutions, Economic Growth, South Asia, Pakistan*

CHAPTER I

INTRODUCTION

South Asia is undergoing a rapid economic transformation and has the potential to become the next major middle-income region of the World, on the footsteps of its neighboring East Asia with effective institutions. More than a million young people are reaching working age every month, and the population of the region's growing cities is expanding at roughly the same pace. It is estimated that by 2030, one-fourth of the global working labor force will live in the South Asia. But this area is not particularly successful to integrate within itself and with the global economy due to lack of inclusive institutions. The demographic transition and poor competitiveness are South Asia's greatest opportunity and greatest challenge. At a time, when the growth rate of international trade has genuinely slowed down, what will determine the region's ability to become an exports powerhouse, create jobs, reduce the rate of poverty, above all, increase prosperity level?

Recently, the World Bank (2016) group focuses answers in the dynamics of firms, clusters, value chains and cities across the region. It identifies several factors that limit the ability of South Asia to compare it among other countries of the World, also proposes avenues for boost productivity, take advantage of rising costs in East Asia and connect to global markets.

One of the major aims of this study goes for identifying; if institutions will be major determinant in economic growth or not and to find correlation between above mentioned things in the Sub continent. (Devangi, *et al.*, 2013) says that an institutional quality is to be observed in case of South Asian economies to explore dynamics of economic growth. To explore income differences across country to country, many questions come in mind i.e. "Why do some nations lag behind others in development and are called poor nations?" Similarly, how some economies have achieved more growth rate while leaving others in a standstill position? Or why some nations produce more output than others?

First, this study explains, what are institutions exactly? Institutions are the formal rules (codified or written rules, e.g. traffic rules or constitution of a country) and informal norms (culture, belief and religion) with the enforcement mechanism shape the human interaction. The founder of "New Institutional Economics (NIE)" (North, 1981) offer the following definition

"institutions are the building blocks of different rules which nations adopt to aggravate their resources". Similarly, Schmieding (1992) elaborate institutions in the following words "institutions are based on rules and regulations which facilitate every individual in a society to achieve his economic ends".

Standard economic answers lie in physical differences *i.e.*, low income countries do not save enough (Solow, 1956; Cass, 1965 & Koopman, 1965) and according to new economic growth theories by different economists i.e. Lucas (1988), Romer (1989) and Mankive *et al.*, (1992), human capital and technology differences *i.e.*, poor countries do not invest enough in education, skill development and R & D. Though, the above theoretical traditions still has importance in economics and provide many insight in growth process but still it seemed unable to explain the fundamental cause of cross country income difference. North *et al.*, (1973) noted: "the determinants of growth e.g. quality of education, innovation in technology, economies of scale, and consistent increase in capital etc. do not supplement growth, but actually are growth".

Economic institutions are major agent of country to country income level differences or cause in economic growth and development among nations across the world because it influences the key economic agents in an economy. They influence different roles in an economy. According to Acemoglu, *et al.*, (2004), it also instigates to adopt new technology in production process. If we elaborate institutions like property rights and market perfections, we come to know that these induce a significant part in growth phenomenon. These are essential to promote economy and its structure. If property rights are absent, economic individuals will get no incentives to adopt new technology or further increase their investment in any kind of capital either human or physical.. Further these allocate resources among factor of production (Acemoglu, *et al.*, 2004).

Institutions are matter for economic as well as political development. According to neoclassical assumption the growth will occur, where the profitable opportunities are available. The nations will face the danger of violence especially developing nations, individuals or group of individuals create violence in order to gather wealth and resources, this violence has become obstacle in growth and development process. Institutions provide the framework to solve the conflict among the key political and economic actors of society.

One group of economists have opposed that institutions matter for growth, e.g. , *et a.l,* (2008), Kirman, (2007) Chang, (2006) and Furubotn, *et al.,* (2005). According to them, reasoning of institutions has started initially therefore more research is required in that area

Therefore, the study has been articulated in a way to foster institutions in potential production function and explore that whether the institutions play the effective role in growth as well as in development process or not in case of South Asian Countries.

Background

Elaborating the way of economic development and determining indicators are very crucial and have long lasting impact on our economic literature. In fact, the research into this particular topic has been the inspiration for the whole subject of Economics. The contribution of Adam Smith who is known as pioneer of economics, says about different means to calculate wealth in his famous book "Wealth of Nations". And after more than 200 years, this enquiry into the means of various income distribution among nations, also in an individual country, is still as important as it was centuries ago. One can find many examples across economic literature where the same fundamental question has been asked again and again by economists. And given the fact that income levels in the USA and Western Europe are so many times greater than income levels in much of sub-Saharan Africa, it is not surprising that David Landes asks the same question in, The Wealth and Poverty of Nations, in the last decades of 20^{th} century.

The persisting gap in living standards and incomes that divide world's demography into a little monitory of wealthy and a large number of poor people. The income level of Burundi, which is one of the deprived nations in world in 1965, was almost two hundred times lower than an earning standard in Switzerland, the highest income country in world in 1965. Moreover, about three quarters of world's population lived in countries that had income levels less than one-tenth of the income level of the richest country in 1960's. Comparing the years 1965 and 2005 shows that not much has been 2 achieved in the last fifty years or so. In fact, one might say that the gap is even wider. And again, more than three quarters of world's population lived in countries that had income levels less than one-tenth of the income level of the richest country in 2005. The vast changes in an economic indicator of per capita income among nations shows the real picture that some countries have been progressing very instantly and have reached to the point of higher and

sustained growth, on the other hand some economies are not making progress overall (Barro and Sala-i-Martin, 2004). To demonstrate the significance of having high economic progress in briefing greater gap in income levels through nations, they use an example of the United States economy. During the period from 1870 to 2000, the United States economy sustained an average growth rate of 1.8 annually, resulting in a tenfold increase in real per capita GDP from $3340 in 1870 to $33,330 in 2000. They also state that it is sustaining this advancement for the long run that creates the United States the highest per capita income country in globe in 2001 later to Luxembourg.

In addition, for an emphasis of the importance of economic growth, Barro and Sala-i-Martin (2004) show if US economy experienced a lower growth rate, like those experienced by India, Pakistan, or Philippines during the period 1900 to 1987, then it would have experienced less than a threefold increase in per capita GDP from $3340 in 1870 to $9450 in 2000, and would have ranked 45th instead of second in the world. Another illustration of the importance for economic development stated by Durlauf, *e.t al.*, (2004), stresses that distribution global population in a slight monitory of the wealthy and a large marginalized class, is an outcome of the information that the England and other Western economies attained positive economic progress during the 18th & 19th centuries, while the rest of the world failed to sustain positive growth rates for much of this time. Thus, although the level of incomes was low across the world in 1700, it was the sustained 3 growth in Western Europe that steadily increased average GDP, and increasingly Western nations outpaced elsewhere in the world, subsequently in the income space among advanced economies in the West & Developing countries.

In general, one can say that regions or income groups that grew faster than the high income group, managed to reduce the income gap and make some improvements in their relative living standards, whereas regions or income groups that grew slower than the high income group, increased the income gap between them and the high income group, and witnessed deterioration in their relative living standards. The illustrations of growth wonders and growth tragedies formulate that economic growth could result in vast improvements to human wellbeing. Therefore, economists believe in better economic development that may involve reliable living standards for many people around the globe and alleviate poverty. Some economists even believe that there is no question of greater relevance to the majority of the world's population or of any greater

academic significance than the question of what explains differences in economic growth across countries and what can be done to accelerate economic growth (Rodrik, *et. al.*, 2004). The proximate sources of growth; capital accumulation and technological progress, only partly explain variations in economic growth across countries, and are considered as a first step in explaining economic growth (Temple, 1999). In other words, proximate sources of growth do not provide much insight into the process of generating economic growth because, using North and Thomas (1973) words, "they are growth".

The proximate sources of income arise many inquiries before answering them .And resultantly why some nations spend larger than others in physical and human capital, but why other nations are so much productive than other nations (Rodrik, *et. al.*, 2004). The process of generating economic progress involves more than studying for the role of proximate sources of growth. Thus, empirical growth literature has recently shown greater interest in studying the deeper determinants of economic growth, and factors that explain the differences in accumulation and technological progress and productivity growth. Deeper sources of growth work through influencing the proximate sources of growth; i.e. they affect the factor inputs and total factor productivity. Numerous economic indicators are determined in the latest studies of deep determinants of growth, such as population growth and demographic transition, financial development, economic policy and other institutions (Temple, 1999).

Therefore, sustaining impersonal exchange that allows individuals to capture gains from trade and productive activity, requires not only a strong third party that enforce governance, but also a strong third party that acts impartially. Impartiality here means that the state must show credible commitment to neutrality, and never engage in predatory activities that expropriate private rights, violate contracts, or pursue redistributive policy that radically alters individuals" wealth or income. North argues that complete impartiality of state is difficult to achieve even in developed countries. However, there is a huge difference in institutional environment with regard to impartiality of the state between developed and developing countries, and this difference reflects on the quality of institutions and therefore has an impact on technological progress and productivity.

To summarize, one can say that institutions have a great role in implementing effective policies to get higher outcomes of economic growth. If effectiveness of government, political stability, and control on corruption, accountability and above all investment in physical and human capital are

well appropriated, developing countries including South Asian economies will get more returns and their economic growth and ultimately development will bring fruits in a higher perspective.

1.1 Objective of the Study

This study has the following objectives:

- To find the relationship between institutions and economic growth in case of South Asia.
- To explore the long run and short run association of institutions and economic growth in case of Pakistan.

1.2 Statement of the Problem

Institutions are very important and have very significant part in analyzing the cross country income differences. Institutions matter for growth and development process through many indicators. However, there are conflicts among researchers in economic literature. Some view that quality of institutions matter for economic growth, (Acemoglu, *et. al.*, 2001; 2002; 2003; 2005, Easterly & Levine, 2001; Dollar & Kraay 2003; Hall & Jones, 1999; Rodrik *et. al.,* 2004). The opponents of this view focus on institutional analysis. Therefore, a thorough research is required for this. (Brousseau & Glachant, 2008; Kirman, 2007; Chang, 2006; & Furubotn & Richter, 2005).This study designed to probe if institutions are operative to explain economic advancement for South Asian region and also Pakistan.

1.3 Research Questions

This study tests the following research questions:

- How institutions are related to economic growth in case of South Asia
- How institutions affect economic growth in long run (LR) and short run (SR) in case of Pakistan

Following this chapter the remaining chapters have been formulated as Chapter II focuses on review of related literature. While, Chapter III discusses “Data and Methodology”. Chapter IV

describes “Results and Interpretation”. Whereas, Chapter V describes “Summary and Conclusions" and the last Chapter VI is formulated for “Policy Implications”.

CHAPTER II

REVIEW OF LITERATURE

Institutions are considered an essential engine for economic advancement in growth and development. The studies from past many years documented for the value of growth related institutions. It reduces transaction cost transformation cost and uncertainty. It is also helpful in conflict management, it controls the violence, North (1990). Many empirical studies are documented for observing significant role among institutions in growth process by shaping the human interaction, for instance, "(Acemoglu, *et. al.,* 2001; 2002; 2003; 2005, Easterly & Levine, 2001; Dollar &Kraay 2003; Hall & Jones, 1999; Rodrik *et. al*., 2004; Rodrik *et. al*., 2002; Rodrik, 1999; Knack & Keefer, 1995; Mauro, 1995; Rodik, *et. al.,* 2002; Siddique & Ahmed, 2009; and Lee & Kim, 2009)".

If we compare country to country income difference, we will know how their economic and political life has been shaped. Knack and Keefer (1995) have examined enforcement of property rights with relation to growth process. Data they used was synthesized by the International Business Organizations (IBOs). Mauro (1995) sought out the relation of institutions with economic growth. He looked at measures for corruption with growth and found negative relationship. Yu (2010) probe the relationship between democracy and trade by using rich panel data. Gravity equation had applied for empirical analysis. He found the positive and significant impact of democracy on trade. Lee and Kim (2009) studied institutions, economic performance with the inclusion of additional variables education and R & D. Panel data was used in case of developed and developing countries. Fixed effect model and generalized method of moment (GMM) had employed. They found the significant result of institution and R & D in case of developed countries. In case of developing sample they found weak relation with R & D. Primary education had appeared positively significant in developing countries. However, two factors play very attentive role in recent literature. These factors are the quality of institutional environment and the degree of openness to trade and capital flow, and integration into the world economy. Examining the relationship between institutions and integration into the global economy on one hand, and economic growth on other, has attracted much interest. However, the substantial part of this literature has investigated whether it is institutions or integration that matter more for growth. In the words of (Rodrik 2004), the literature shows an interest in running "horse races" between

institutions, and integration views. Two groups of researchers, among others, have been involved in this race, where the integration view is represented by (Dollar & Kray, 2003), and institutions are represented by (Rodrik, *et. al.*, 2004). Indeed, it is of great importance to examine which determinant "trumps everything else", therefore we may examine the role of institutions, and process in the integration into the global economy, has any effects of economic growth.

This thesis explores the economic literature and studying different extents of the links among important institutions. Institutions play an essential role because they, as defined by North (1990), are the rules of enforcement in a culture and, therefore, they shape in a way individuals act together, and guide the economic behavior to the agents. More importantly, institutions determine the security for property rights in a society Moreover, poor institutions allow and encourage unproductive activities which can slow down economic growth as resources are driven away from the most productive activities. An example is spending much time and effort securing the required permits to open up a factory or to start a business (Gamber and Scott, 2007). This diversion of scarce resources away from productive activities has profound negative effects on economic growth.

On the other hand, skilled and well-known institutions offer suitable atmosphere for growth leading activities e.g. investment, innovation, and entrepreneurship, and allow society to work efficiently as individuals are capable to spending profitable things (IMF, 2003) and (World Bank, 2002). It seems that there is not much dispute that the quality of institutions, and specifically an effectiveness of government, is a significant determinant in economic growth. An argument of positive correlation of institutions and their impact on economic growth is advocated by many empirical studies. An early studies that explored this relationship used various measures of political attributes like indices of political stability, including number of upheavals, insurgencies, political victimization, political freedom and civil rights, such as Gastil (1983) index, because of the scarcity of indices that directly measure the status of property rights protection.

However, the availability of subjective indices that measures various attributes of institutional indicators from (ICRG) has made it easier for recent papers to directly test North's notions to highlight value of institutions in economic growth. Among the pioneering studies that investigated the link among institutional quality and economic development, is of (Kormondy and Maguire, 1985), who practice Gastil's indices of political freedom to proxy institutions, and found

that institutions play a marginal role in economic growth. Scully (1988) uses the same index to observe the linkage of institutions and their impact on economic development. His results support the claim that institutions matter for growth. Dawson (1998) also uses Gastil's index to check the impact of institutions in economic growth. He calculates in his findings that institutions have direct impact on growth by various factors of production and have indirect relation of influence on investment. Barro (1991) finds that institutional attributes related to political uncertainty are significantly related to investment.

Mauro (1995) uses the quality of bureaucratic index to discovering importance of institutions in economic growth, and explores that corruption discourages an investment, hence hinders economic growth. (Knack & Keefer, 1995) are the first to use indictors which are very near to the institutions stressed by North, Weingast, and Olson. They use ICRG to test the relevance of institutions to economic growth and find strong support for the notion that institutions have huge impact on economic growth and investment. Hall and Jones (1999) find that institutions have a substantial impact on labor productivity and growth. Acemoglu, *et. al.,* (2001) documented that institutional quality imparts strong influence on income level. Rodrik, *et. al.,* (2004) find that institutions trump all other growth determinants. Acemoglu and Johnson (2005) identify trade openness as one of the main determinants of economic growth. It shows a positive development of institutions which stick for growth, and that building high quality institutions that enforce contracts, and that specify and protect government effectiveness, is one of the preconditions for sustaining economic growth.

However, economic literature does not provide much insight into how to attain well-functioning institutions (Shirley, 2005). In particular, available empirical data of institutional quality and human capital link institutions in historical, cultural, and geographical variables (Levine, 2005). It is an explicit assumption in this literature that institutions are persistent and change very slowly over time (Acemoglu *et. al.,* 2001). Yet North (1990) states that "We live in a world where the rapidity of institutional change is very apparent". In fact, Kaufmann *et. al.,* (2009) report that between 1998 and 2008, many countries have made a tremendous improvement in different governance and institutional indicators including rule of Law index, one of indictors of government effectiveness, while many countries witnessed dramatic deterioration in theirs within the same period. What explains these changes? The available empirical literature does not provide

much insight to answer this question. Recently, the notion that the forces of globalization have induced radical change in institutional quality in local economies has been widely debated (Campbell, 2004). If FDI is found to have an impact on trade openness then openness to foreign capital can be proposed as a strategy for refining an institutional value in developing countries. It is particularly important as the available evidence shows that using aid as a strategy to enhance institutional quality in developing countries has been generally unsatisfactory or has even had negative results (Brautigam and Knack, 2004) and (Shirley, 2005).

A large body of economic literature documents for institutional quality that has a very crucial role in defining economic development after having an effect of investment in physical and human capital, and technological progress and innovations. An institutional role, predominantly government effectiveness, political stability, trade openness etc. have a positive impact on economic progress (Knack & Keefer, 1995) and (Rodrik, *et. al.*, 2004). North (1990) suggests that under developing nations have no strong institutions which may stimulate their economic growth while the developed nations have strong institutional mechanism which may enforce many institutional variables in a true sense to achieve higher outcomes and ultimately these economies get sustained economic growth.

Institutional environment plays its role because it sets the incentives of actions, and defines the available choices which ultimately determine not only economic growth, but also the way the whole society evolves. One way in which institutional quality can affect economic growth, is related to the role played by institutions in determining transaction costs and the implication of this to the market size, specialization, and technological progress. Trade and transactions among individuals involve some sort of risk and uncertainty about the behavior of the other party involved in the exchange. This risk and uncertainty stems from the fact that different parties may have asymmetric information, and that transactions are not always instantaneous. Parties of exchange, therefore, may act opportunistically when the payoff for such behavior exceeds the payoff for other alternatives. For example, Parties of exchange may cheat or lie about the quality of what is being traded, or they may shirk from their responsibilities, or renege on their deals and not live up to agreements. Thus, transacting and trading involve some sort of costs related to this risk and uncertainty, and to the time, effort, and resources devoted to defining, protecting, and enforcing agreements (North, 1990).

As Coase (1992) argues, exchange Parties consider transaction costs when they make their decisions regarding trade and exchange, and when transaction costs are so high that they exceed the expected gains of trade, individuals will refrain from trading, which will reduce the volume of trade and limit the market size. To elaborate more on the role of institutions and how they affect individuals‟ behavior regarding cooperation and trading with others, and therefore transaction cost, North (1990) uses the terminology of game theory. North documents that the literature of game theory shows that individuals usually find it to their advantage to cooperate with other, including trading and exchange, when the game is repeated, when they possess complete information about the other parties of exchange, and when the exchange involves a small number of individuals.

However, North (1990) argues that individuals may find it to their advantage to act opportunistically or decide not to cooperate with others when the exchange is not repeated, when they do not have enough information about the other party of the exchange, or when the exchange involve lots of parties. In such cases, individuals may find the payoff for opportunistic behavior (e. g lying, shirking, and other sorts of defection) higher than the payoff for cooperation. As a result, North concludes that impersonal complex cooperation and exchange cannot be sustained without the intervention of a coercive state that provides a well-developed institutional framework. When institutional environment cannot give formal procedures, individuals might enforce huge transaction costs. They will keep their economic activities with individuals they already know or have a relationship such as ethnic or religious connections, or any other social networks.

These ways of trading provide them with mechanisms of enforcing contracts and policing agreements that reduce transaction costs. These mechanisms include threats to reputation that increase the cost of opportunistic behavior in repeated transactions, and threats to ostracize individuals from kinship ties that increases the cost of opportunistic behavior in transactions between the members of the same social network (North, 1990). In this way, they keep the level of transaction cost low, but they do so after limiting their business activities. In general, one might say that the economies which have no effective institutions have a very limited trade openness so there will be a small market size and less specialization and no division of labor. While improving institutional quality will reduce transaction costs and allow individuals to capture the gains of trade which will encourage them to engage in complex impersonal exchanges that extend across time

and place. In trade openness, the role of technological advancement plays a very important role because technology flourishes an advancement in a sense of specialization and market extent. North & Thomas (1973) explain how market size affects the rate of technological progress. Their main argument supports the idea of large market size that induces the activity of private business after getting higher returns. They argue that when the markets expand, and when the division of labor become more specific, the reward for finding ways to improve production methods increases. They argue that the expansion of markets, and the resulting increase in specialization degree, allows individual entrepreneurs to concentrate on a narrow range of activities which help them to direct their innovative skills to more limited problems, hence improving technological advancement and output.

To sum up, institutional improvements lower transaction costs and expand the size of markets having increased outcomes from technological advancement and trade. So it encourages new ways to explore technology that will automatically impact on economic development. The institutional environment affects the rate of technological progress beyond the effect that is attributable to increasing market size and specialization, because it also determines whether inventors or entrepreneurs would get appropriate returns for their efforts. Institutions may discourage innovation if inventors and entrepreneurs could not be sure that they will obtain the fruits of devoting their time and resources to innovations. This will reduce and delay the adoption of new technology, which ultimately reduces the economic growth rate.

Schmookler (1966) argues that, contrary to the popular idea that scientific discoveries stimulate inventions, it is economic reward and taking advantage of potentially profitable opportunities that stimulate invention and technological progress. He provides evidence that the effort to seize profitable opportunities or to reduce the cost of production is the main force behind many cases of remarkable industrial inventions. Schmookler's argument means that there is a link between factors that affect market conditions and determine the expected reward for innovative activities on the one hand, and innovation rates on the other (Grossman and Helpman, 1993). Referring to Medieval China, Baumol (1996) shows that institutional quality in general, and the risk of expropriation of private gains from innovative activity by the government, hindered technological progress, despite the fact that Medieval China witnessed some major inventions like the printing press. He argues that the institutional environment that encouraged individuals to

become bureaucrats rather than entrepreneurs, in order to gain high status and wealth, explains at least partly, the lagging of China behind the industrialized countries.

North (1990) explains how institutional quality in general, and the risk of expropriation in particular, affects the incentives to innovation and technological progress, and thus economic growth. As shown above, sustaining impersonal exchanges that extend across time and place and involve large numbers of individuals, requires some kind of third-party enforcement. Put another way, institutions must be created to provide sufficient information for parties to exchange and to enforce contracts and police agreements through the threat of coercion and punishment. The role of the third party can be played by a state that is strong enough to enforce rules. However, North (1990) explains a strong state poses a dilemma, because any party strong enough to enforce rights, is also strong enough to expropriate them, and since rulers have their own utility function, they may be encouraged to use their power to expropriate rights or alter them for their advantage.

Massa (2011) tried to focus his study on financial institutions and their linkage with economic growth after sampling data of 101 economies. She used panel data from 1986-2009. She employed Generalized Method of Moments (GMM) for empirical analysis. She found positive and significant impact investment in case of all sample countries. She further found that there was stronger impact of investment on growth in case of low income countries. The result showed that 10% increase in investment would increase 1.3% in case of low income and 0.9% in scenario of large income earning nations. Similarly Betancourt *et. al*., (2010) tried to find out an effect of various kinds of institutions on development. They took data from Freedom House. They found that the institutions of property right have significant impact in long run growth.

Le (2009) dug out an impact in case of "trade, remittances, and institutions" for economic output for 76 under developing nations and panel data was obtained from 1970-2000. He applied pooled "ordinary least square (OLS)" and "generalized method of moments (GMM)" in his analysis. He discovered that trade and institutions lay positive results, also statistically meaningful on per capita output. While remittances hinder the economic growth in case of all sample countries.

Solow (1956) presented the neo-classical theory of growth. According to him, economies usually follow a gradual path towards growth in the short run. While in the long run, per capita level starts converging. Due to the lack of empirical evidences, he couldn't meet the challenges

regarding convergence. Afterwards, Romer (1986) and Lucas (1988) presented a much better approach that is endogenous growth theory. The theory empirically supports the fact well that the convergence in the long run depends upon some important factors (institutions). Some new growth theories also supported the fact that current technological setup can be adopted easily by any sector of any less develop or developing country whenever the economy of that particular country innovates. Where 'to innovate' means adoption of new technological setup. It ultimately leads to institutional development. Therefore, the process of development depends upon the institutional setup.

Different institutions can be beneficial for states in quite different manner. At first, North (1981) gave two concepts of institutions in two different theories named as 'Contract theory' and 'Predatory theory 'to understand the concept of institutional importance. The former theory states that it is the state and the institutions affiliated with that (political institutions) which provide a proper legal framework for private contracts to be held and facilitate the economic transactions. It is clearly indicated therefore that institutions are very important boosting growth process. The later theory predicts that state is basically an instrument to transfer resources from one group to another in an economy (pointing towards an efficient institutional setup).

Here are some of the reviews of some researchers who ensured the important role of institutions in increasing economic growth. North (1990) explained the term 'institutions' as different constraints which can shape the human interaction (also derived by them self). He clearly emphasized on the importance of institutional arrangement in a social setup. Another very important finding was why some strategies fail to produce similar results when applied in different economies. The reason given by him for that is no economic reforms should have been made without a corresponding changes in both political and social institutional setup.

Heniz (2000) found a link between the differences in cross-national growth rates and the measures of political constraints. For this purpose, he derive a spatial model of political interaction (that is having significant impact on economic growth) by using three stage least squares and a generalized model of moment's estimation techniques.

Vijayaraghavan and Ward (2001) identified the relationship between institutional infrastructure and economic growth rates across different nations within the framework of the

neoclassical growth model. The most important institutions that account for the variations in economic growth among 43 different countries are identified by the indicators of institutional infrastructure in an economy. These indicators include secured property rights, governance and political freedom.

Grogen and Moers (2001) suggested that institutions are important in increasing growth and also foreign direct investment (FDI). To prove the fact empirically, the data from 25 countries (central and eastern Europe as well as former Soviet Union) has been taken for 9 years (1990-1998). The results from 2TSLS regression of institutional variables on economic growth and FDI along with Hausman test emphasized that the used of subjective measures of institutions (instead of objective) are correlated with both economic growth and FDI. Therefore state institutions are very important in increasing economic growth.

Beck *et. al.,* (2002) presented a cross country database of political institution (DPI) to facilitate the researches while investigating the facts of political economy. According to them, DPI is the most authentic resource of data as it provides all information about economic reforms in a large set of countries as well as the root of institutional and political corruption which is perfect for the sensitively designed economic policies of institutions.

Ali and Crain (2002) depicted that political freedom does not have significant impact on economic growth but economic freedom does accelerate that. They explained their view with the logic that autocratic economies should adopt the policies which allow economic freedom and encourage private investment. Whereas the democratic economies (with full political freedom) should adopt the policies to diversify the resources and discourage investment or private initiatives. For this purpose, they develop a model to investigate a relation of economic growth with both political and economic freedom.

Ulubasoglu and Doucouliagos (2004) analyzed the institution-growth relationship in a simultaneous with error component framework. By taking into account, the individual heterogeneity in a cross-country production function. They differentiate the impacts of institutions on economic growth as direct or indirect by suggesting that ‘political freedom’ has a negative relation with physical capital accumulation and labor force whereas ‘economic freedom’ has a

positive effect on physical capital accumulation and labor force. Thus, economic growth will increase by increasing both political and economic freedom.

Chowdhury (2004) indicated by using data from World Bank that countries in South Asia has a very low rise in per capita income by using σ convergence as the rise in per capita income dispersion in South Asia. He analyzed the data for 7 South Asian countries from 1960 to 2000to understand the problem of convergence of income per capita GDP in the region. His results showed clearly an absence of any convergence of per capita income in South Asia.

Chousa *et. al*., (2003) found that it is not only the economic growth required for developing a sound institution setup but there are some other factors also. He introduced an operational indicator for institutional system to examine the relation between economic reforms. Thus by using the adjusted operational indicator (AOI) for 20 countries passing through their transactional phase, it is found that a completely democratic setup under a strong governance can be as effective in determining institutional reforms as an authoritarian regime to increase economic growth of a country in transaction state.

Chang (2006) discussed about different problems arise from simplistic view of institutional change he rejected the typical view on institutional persistence. He examined the role of institutions in the phase of development of a country by reviewing the typical discourse on institutions critically and therefore highlight some of the important problems.

Damanpour, *et. al*., (2006) attempted to recognize some of the important policy and conceptual gaps of a political economy while reviewing the growth literature. The article offered a critical analysis of up to dated comparative research on economic growth as well as institutions. He emphasized particularly on the analytical and policy implications while his review.

Brunt and Liam (2007) presented their view as because of the effect of colonial inheritance, the occurrence of institutions is highly correlated across different countries. This is infect the biggest challenge in the way to find the impact of different institutions on economic growth. This study basically focused the point that which institution matters most for economic growth. They finally found that it is much better to judge the performance of a country over some time to check

the impact of institutions instead of facing the problematic correlations while looking across countries.

Hassan *et. al.*, (2008) found that exists a strong positive relation economic growth and institutional development by using GMM technique. To support their view, they used panel data of 31 different provinces of China for the time period of 1986 to 2003 and the main variables taken by them were financial deepening, political pluralism as well as the role of some legal institutions of China. The results thus indicated that transaction in China (from 20 years) create big changes in the political and economic institutions which is finally the cause of variation in the development level of different countries.

Acemoglu and Robinson (2008) argued about the main determinants of difference in prosperity across countries (income per capita) are due to the differences in economic institutions by sketching a framework of some institutional characteristics(economic institutions, political institutions and political power). According to them, to reform these institutions is a difficult process as economic institutions depend on the nature of political institutions as well as political powers of a society. However, some examples were given about the countries who reform their institutions by undergoing political transitions and move onto successful paths of economic growth like post World War II experience in Taiwan, China and republic of Korea etc.

Le (2008) focused on the some important factors like institutions, trade and remittances on economic development over a very large set of countries which develop instruments for the variables in both short run and long run. It is found by using dynamic regression analysis that institutions foster economic growth whereas remittances hamper it. For this purpose, He provided empirical evidence through regression of growth rates of countries on trade, institutions and remittance (by taking Panel data of 5 years and cross country for 30 years). Thus there is a significant effect of institutions, trade and remittances on economic growth.

Hosseini (2008) the average revenue product of a society will increase if the institutions are working efficiently and appropriately, as the welfare of the society will increase in that case which ultimately leads to the economic growth. He found that the problems and hurdles in the institutional setup of Iran can be easily recognize by investigating the impact of institutions on different sectors like financial markets and transaction cost etc. He further suggested that the role of the institutions

should be clarified by the state. Finally, by decreasing democratic transaction cost, economic welfare can be increased.

Wagner *et. al.,* (2009) measured the satisfaction with democracy (SWD) in some countries of Western Europe by using a panel data analysis for ten years. The results shows that if the economic performance is lower, average SWD will also be lower so it have a direct relation with institutional efficiency. Similarly, the high quality institutions increase average SWD, where high quality institutions are those institutions that can improve the quality of political activities and allocation of economic resources.

Rodrick (2009) focused attention on the fact that institutions are much more important than trade as if institutions do not work properly, the mechanism of market economy cannot work properly. He suggested that markets always required some efficient institutions to run them as a stabilizer, regulator as well as a legitimate. This is the reason why the efficient institutions are considered as a necessary requirement for an economy to grow.

Lee and Kim (2009) said that there are many different factors which effect same countries in different manner according to the different income levels. Also some important factors like educations and technology and institutions effect economic growth a lot in long run. Acemoglu *et. al.,* (2013) also describes the income gap among nations. The countries which have adopted technology, introduced many structural reforms, empowered institutions lagged developing nations behind them. To prove this empirically, they have used a fixed effect panel and system GMM technique of estimation. The results showed that both institutions and the secondary education are important for lower income countries whereas the technology and higher income level are more effective for higher income countries particularly. Therefore a two sided causality exist between institutions and the economic growth of a country.

Siddiqui and Ahmad (2009) showed that political and economic institutions in Pakistan effect long term economic growth. The idea is presented by an institutional index of social technologies for the time period of 1984-2006 (where technology is the factor which is important in increasing the productivity and efficiency in Pakistan). The index is consists of two main sub groups i-e ‘the risk-reducing technologies’ and the ‘anti-rent seeking technologies. The former refers to the technologies which reduces the risk from producing activities and the later is the costly wealth

transfers. By using OLS and GMM estimation, it is depicted that institutions promote long run growth in Pakistan. Therefore, it is concluded that any policy can be succeeded only if there is a sound institutional setup in an economy.

Klomp and Haan (2009) found the impact of political institutions on the economic growth volatility. For this purpose, the data of more than 100 countries was used in the time period of 1960 to 2005 to measure the growth volatility. To measure the volatility of growth, standard deviation of the growth rate of GDP per capita was taken and a dynamic panel data model was used. It was found that economic growth volatility is decreased due to democracy. On the other hand, political instability and uncertainty in applying economic policies increase the growth volatility.

Siddiqui (2010) examined the main factor in a country's development is the role of state. He also surveyed that studies conducted previously to assess the neo classic convergence of economic growth. Thus there is a serious need to study the country specific techniques so that their dynamics can be fully understood.

Effendic *et. al*., (2011) investigated the economic performance of institutions. For this, a relatively new economic technique i-e meta-regression technique to found out the impact of institutional setup on growth. The statistical tools develop by MRA practitioners of institutions on economic growth. As a conclusion, they suggested that a reasonably large size of institutions cannot even function properly if there is no positive relation between institutional quality and economic growth. For this particular finding, they have used many different publications of MRA so that the effect of institutional setup on output level can be found.

Javaid and Ifthikhar (2011) developed the indicators of institutional quality for certain Asian countries and found the factors strongly effect that in Asia. The panel data is used for regression to analyze the effect. The factors considered are per capita income, efficiency of tax system, trade openness and rate of education which are considered as important for determining the quality of institutions in short run. Also, military expenses and the political budget should be decreased to improve the quality of institutions in long run. They used GLSE technique used by them showed that all these factors affect the institutional quality of different countries in a different way.

Khan and Khawaja (2011) found out the effects of predation on the aggregate output level or gross national income and per capita consumption by using the game mechanism. They showed that predation has an indirect relation with economic growth. The variables taken are per capita income, inflation and the governance indicators for 20 countries who are rich and 20 countries which are economically poor in the region of South Asia. It is found thus that to increase NI, institutional quality should be improved, also, per capita consumption can be increased by distributing resources from well-endowed to poorly-endowed.

Singh *et. al*., (2012) suggested that in under developed countries, the existence of informal economies can hamper the state's capability to enhance a strong institutional setup. The reason is the increasing underground economy accounts for a larger share of national income when the rule of law is weak and there is a corruption institutional setup. Alternatively, the size of the underground economy decreases because the state involvement and quality of formal institutions increased. Their empirical analysis suggested that the institutions are very important to determine the size of the underground economy. It is also mentioned that the IMF has been involved in strengthening economic institutions in the context of both technical assistance and providing a financial regulatory framework to its members.

Sarwar *et. al.*, (2013) found that along with the inflation, education and population growth there is one more factor that can effect economic growth i-e institutions in case of selected countries of South Asia. By using an institution index and GDP index for measuring each of institutions and economic growth and applying Fixed Effect Method and GMM, it is observed that both economic growth and institutions are related significantly fin case of SAARC countries. The estimated results suggest the policy implementation is strongly based on institutional quality of a country.

From the above discussion, it has been concluded that institutions have multidimensional impact. It have three broad categories *i.e.*, economic institutions, political institutions and legal institutions. Most of the studies in the existing body of literature use single proxy to measure the institutional impact on growth and development. It may not be capture the complete institutional effect. The present research work has an important inclusion in actual literature because it quantifies the institutions by incorporate institutional index (Index of Economic Freedom).

This study will also develop the GDP Index. It will be developed after utilizing UNDP methodology coming in 2000 instead of conventional measure of GDP growth. Another important feature of current research is that, it will employ the panel regression (fixed effect or random effect) in case of sample countries. Time series or cross section techniques have certain limitations, for instance in case of small sample time series model is not providing the reliable results. The research may also apply GMM to avoid endogeneity and omitted variable. GMM and FEM take better care of endogeneity problem and omitted variable in small sample case (Acemoglu *et. al.*, 2001, 2002 & Rodrik *et. al.,* 2004). FEM overcomes problem of omitted variable and time invariant heterogeneity (Islam, 1995).

After having an overview of previous literature, it is clearly observable that how much important role institutions are playing in economic growth process. This study is a useful addition to this empirical literature by revealing the fact that sometimes, even the most well thought out policies cannot be effectively executed if the government is confronted with imposing different kind of challenges as well as growing public impatience. In that case, institutional strengthening and civil service reforms should be an integral part of the government's agenda if governance is to improve and be upgraded. How the process and system is managed could lead to greater hope or may be to more disillusion. It can be easily concluded that existing literature on the impact of institutions on economic growth in case of South Asia and Pakistan is limited. Moreover, South Asia being a developing region is also characterized by unstable governments over the years which signify the need to find this relationship in case of South Asia and Pakistan.

CHAPTER III

DATA AND METHODOLOGY

The present research targets the time span of 1990-2014 to capture the relationship between institutions and economic growth in case of South Asia such as Pakistan, India, Sri Lanka and Bangladesh (panel data) and specifically in case of Pakistan (time series). For this purpose, we used government stability, domestic investment, human capital, infrastructure, inflation and financial development as explanatory variables and economic growth as explained variable. The variables are defined below:

3.1. List of Selected Variables:

(i) **Economic growth**: Economic growth represents GDP at purchasing price. It is the sum of all the production by various economic agents in an economy along with taxed on the production and subtracting the given subsidies. Depreciations are not deducted. Data are in constant 2010US$ terms.
(WDI, 2016).

(ii) **Institutions:** The proxy for institutions is government stability. The government stability means that how powerful the government is in carrying out its programs while in office. It is a sum of three components such as government unity, legislative power and popular support. The risk rating assigned is the sum of three subcomponents, each with a maximum score of four points and a minimum score of 0 points. A score of 4 points equates to Very Low Risk and a score of 0 points to Very High Risk (ICRG, 2015). It explains the structure of institutions because government stability explains the capacity of elected government to hold office and there is lesser instability in the economy. Lesser instability results in smooth interaction between people and institutions ensure smooth interaction between people. Therefore, given the nature of political structure in our selection sample, government stability is taken as a proxy of institutions.

(iii) **Domestic Investment:** For domestic investment, Gross Fixed Capital Formation (GFCF) is used. It consists of plants, machines, land improvements, roads, railway tracks, educational institutes like schools, hospitals and industrial and private houses. Data are in constant 2010 U.S. dollars (WDI, 2016).

(iv) **Human Capital:** Total labor force comprises people ages 15 and older who meet the International Labor Organization definition of the economically active population: all people who supply labor for the production of goods and services during a specified period. It includes both the employed and the unemployed. While national practices vary in the treatment of such groups as the armed forces and seasonal or part-time workers, in general the labor force includes the armed forces, the unemployed and first-time job-seekers, but excludes homemakers and other unpaid caregivers and workers in the informal sector (WDI, 2016).

(v) **Infrastructure:** Railway lines are used as a proxy for infrastructure. We use the length of railways that are used by trains (WDI, 2016).

(vi) **Inflation:** Inflation as measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency (WDI, 2016).

(vii) **Financial Development:** Broad money is the sum of currency outside banks; demand deposits other than those of the central government; the time, savings, and foreign currency deposits of resident sectors other than the central government; bank and traveler's checks; and other securities such as certificates of deposit and commercial paper (WDI, 2016).

3.2. Panel Data Methodology

Cross-sectional reliance creates hurdles for a lot of panel data. For explanation, spatial correlations can be observed in different studies of microeconomics, international economics etc. and units are used sometimes for non-random samples in economies. Also, in finance applications, cross-sectional units are to be shared or portfolios of assets that act, perhaps heterogeneously, to the aggregate market impact. Despite the fact that this spatial dependence may not hamper across the board with consistent parameter estimation, reliable methods which have no positive results

will give an inconsistent estimates of standard errors of these parameters. Spatial correlation also yield positivity, but have many limitations to be occurred.

While considering a panel data model with fixed T and cross section dimension N. Here parametric correlation is possible. With misspecified restrictions, the properties are generally unknown. In this case, it is more appropriate to implement nonparametric estimation procedure. But nonparametric approaches have two major limitations. Firstly, there is no clear order of cross sectional dimension upon which we base our cross sectional analogues. Secondly, even if such an ordering were available, mixing conditions that require the dependence between two observations that are "far apart" in the cross-sectional ordering to be small rule out canonical forms of cross-sectional dependence such as equal cross-sectional correlations.

The cross sectional covariance can be used to construct robust standard errors during spatial correlation. This can be estimated using parametric estimation methods or spectral density matrix which is given by Newey and West (1987). But their approach also has two limitations. When N is large, their estimation procedure lead to singular estimate of N*N matrix containing cross sectional correlations. Secondly, if T is large comparatively, the sample properties can become quite poor and cross sectional covariance matrix will be unreliable. Moreover, Monty Carlo simulations can also demonstrate a failure of correcting spatial dependence and the properties of small sample selected with common alternatives. As in the presence of spatial dependence, the standard errors obtained are biased. Given that spatial correlation standard errors are mostly relied on T asymptotic, the finite sample performance is affected by common alternatives by ignoring spatial correlations even when time dimension is small.

Given that White (1980, 1984) and Huber (1967), Arellano (1987), Froot (1989) and Rogers (1993), Beck and Katz (1995), Parks (1967) and Kmenta (1986) suffered from various weaknesses. These weaknesses were the presence of spatial dependence, heteroscedasticity and correlation of residuals in the model. Driscoll and Kraay (1998) by focusing on the large T dimension showed that standard nonparametric approach can be modified in robust for these weaknesses. They applied the Newey-West correction to the sequence of cross section average. Adjusting the standard error estimates in this way guarantees that the covariance matrix estimator

is consistent, independently of the cross-sectional dimension *N* (i.e. also for $N \to \infty$). Therefore, Driscoll and Kraay's approach eliminates the deficiencies of other large *T* consistent covariance matrix estimators such as the Parks-Kmenta or the PCSE approach which typically become inappropriate when the cross-sectional dimension *N* of a micro econometric panel gets large.

3.3. Time Series Methodology

When data of time series dimension has constant mean, variance along with covariance, we say that data is a stationary data. On the other hand, if the time series dimension data violates any of the above mentioned property, we say that data is non stationary. An econometric analysis would yield biased results if we run OLS on non-stationary data (Philips, 1986). In this case, spurious regression can arise resulting in misleading t values, high R^2 and biased F statistics. Thus relationship between two non-correlated can exist in spurious regression.

3.4. Testing for stationarity

The two methods of testing stationarity of time series are as follows:

3.4.1. The Autocorrelation Function

It is also known as the traditional method. In this method, we observe correlogram that with increase in lag k, the correlation coefficient increases or decreases. The series is said to be non-stationary if it falls or increases as a result of rise in lag k.

3.4.2. The Unit Root Test

It is known as modern method. It is also used to check the order of integration of the variables. It was given by Dickey and Fuller (1979, 1981) given as:

$$X_t = \varphi X_{t-1} + \varepsilon_t \qquad (3.1)$$

Where $-1 \leq \varphi \leq +1$ and ε_t is known as error term and it is set to white noise.

If $|\phi| = 1$, we say that the process has unit root. Now, to explore the value of ϕ, one must regress xt on the lag. When ϕ=1, we say that the series has unit root and the value of ϕ has the problem of unit root. We can also check for unit root process by deducting xt-1 on both right and left sides of our equation.

$$x_t - x_{t-1} = x_{t-1} - x_{t-1} + \varepsilon_t \quad (3.2)$$

$$\Delta x_t = (\varphi - 1)x_{t-1} + \varepsilon_t \quad (3.3)$$

Using δ as a substitute for (ϕ-1) we can write:

$$\Delta x_t = \delta x_{t-1} + \varepsilon_t \quad (3.4)$$

The test of stationarity can be performed by considering one of the following forms of equation (3.5) depending on the requirement and nature of data.

$$\Delta x_t = \delta x_{t-1} + \varepsilon_t \quad (3.5)$$

$$\Delta x_t = \alpha + \delta x_{t-1} + \varepsilon_t \quad (3.6)$$

$$\Delta x_t = \alpha + \beta t + \delta x_{t-1} + \varepsilon_t \quad (3.7)$$

Where t is a symbol for time and ε_t represent white noise error term.

Equation (v) is called a random walk model. As an equation contains an intercept, we say it has random walk along with a drift. As an equation has both intercept and a trend, we call it a random walk including both drift along with a time trend. The below given hypothesis is used to examine the stationarity of selected variables. H_o: $\delta = 0$ is for a series with unit root while $t_\delta \geq \tau$ H_o: $\delta = 0$ for stationarity of series if $t_\delta < \tau$. In these hypotheses, t_δ shows t-statistic of δ while τ (tau) represents critical values of Dickey and Fuller (1979).

3.4.3. Augmented Dickey-Fuller Test

In the available literature, ADF (1979, 1981) tests are frequently used and these tests are reliable to check the order of integration of variables. Dickey and Fuller have given the table values of t_δ called tau statistics by applying Monte-Carlo procedure to test for the null hypothesis of non-stationarity in the time series variables.

We can apply this procedure in two steps:

Step 1:

First of all, OLS is applied in the following equations.

$\Delta X_t = \delta X_{t-1} + \sum \gamma_j \Delta X_{t-j} + \varepsilon_{1t}$

$$\Delta X_t = \delta X_{t-1} + \sum \gamma_j \Delta X_{t-j} + \varepsilon_{1t} \quad (3.8)$$

$$\Delta X_t = \alpha + \delta X_{t-1} + \sum \gamma_j \Delta X_{t-j} + \varepsilon_{2t} \quad (3.9)$$

$$\Delta X_t = \alpha + \beta t_1 \, \delta X_{t-1} + \sum \gamma_j \Delta X_{t-j} + \varepsilon_{3t} \quad (3.10)$$

Where

$\Delta X_t = X_t - X_{t-1}$

q = number of differenced variables lags.

Step 2:

Following hypothesis are used to decide the existence of unit root.

$H_o : \delta = 0$ for non-stationary of series if $t_\delta \geq \tau$

$H_o : \delta < 0$ for stationary of series if $t_\delta < \tau$

Auto Regressive Distributive Lag Approach (ARDL)

ARDL was set forth by Pesaranet *et. al.*, (2001). It is the combination of auto regressive and distributive lag model. An ARDL function consists of both present and lag terms of all regressors. It tackles the problem of endogeneity. It provides a comprehensive co-integration analysis because it provides both long run and short run dynamics. It also marginalizes the omitted variables problem. It leads to unbiased along with efficient estimates (Pesaran, *et. al*., 2001). It has clear advantage over co integration time series techniques because it can be applied if the independent variables are integrated of order 0 and 1. It does not include a variable of order 2. But dependent variables must be stationary of order 1. Using Pesaran and Pesaran (1997), one can find the short run dynamics which can be written as below:

$$\Delta LGDP = a + \sum_{i=1}^{n} bi\,\Delta(LGDP)_{t-i} + \sum_{i=0}^{n} ci\,\Delta(LGS)_{t-i} + \sum_{i=0}^{n} di\,\Delta(LGFCF)_{t-i} + \sum_{i=0}^{n} ei\,\Delta(LLF)_{t-i} + \sum_{i=o}^{n} Pi\Delta(LRL)_{t-i} + \sum_{i=o}^{n} Wi\Delta(LINF)_{t-i} + \sum_{i=o}^{n} Xi\Delta(LFD)_{t-i} + \delta_1 LGDP_{t-1} + \delta_2 LGS_{t-1} + \delta_3 LGFCF_{t-1} + \delta_4 LLF_{t-1} + \delta_5 LRL_{t-1} + \delta_6 LINF_{t-1} + \delta_7 LFD_{t-1} + \varepsilon_t$$

CHAPTER IV

RESULTS AND INTERPRETATION

4.1. Descriptive Statistics

Table 4.1. Descriptive Statistics

Variables	Observation	Mean	Standard Deviation	Minimum	Maximum
LGDP	100	25.64	1.26	23.74	28.38
LGS	100	1.92	0.37	0.60	2.40
LGFCF	100	24.09	1.40	22.03	27.28
LLF	100	17.81	1.43	15.71	20.02
LRL	100	8.81	1.44	7.27	11.09
LINF	100	1.96	0.64	-1.86	3.21
LFD	100	1.78	0.55	0.62	3.17
Source: Author's own estimates					

The table 4.1 shows that description about the data set used this analysis. For the set of panel data analysis, a total of hundred observations are used for all variables showing that the data was balanced panel. Firstly, the means of all the variables are given. The means suggest that LGDP has the highest mean as 25.64 and LFD has the lowest mean of 1.78. Similarly, the standard deviation represent that there isn't high variations in the data of all the variables. The highest standard deviation is of LRL as 1.44 and lowest standard deviation is of LGS as 0.37. The range of the data is also given as LGDP has the highest minimum value such as 23.74 and LGS has the lowest minimum value as 0.60. Lastly, LGDP has the highest maximum value as 28.38 and LGS has the lowest maximum value of 2.40.

4.2. Panel Data Results

This research targets the panel of South Asian countries such as Pakistan, India, Sri Lanka and Bangladesh in order to examine the relationship between institutions and economic growth for the time span of 1990-2014. All the variables are taken in natural logarithm form. For this purpose, this research resorts to traditional panel approach. Using fixed effect model, the results show that government stability have a negative and significant impact on the economic growth of Pakistan. While domestic investment and Infrastructure also show a positive and

Table 4.2. Driscoll-Kraay Standard Errors Approach Results

Dependent Variable	Fixed Effect Model	Random Effect Model	Hausman Test	Diagnostic Tests	Driscoll-Kraay S.E Approach
LGS	-0.041*** (0.014)	0.052 (0.037)	Chi^2 (6)= 35.12 Prob> Chi^2= 0.000 (Fe is preferred)	Breusch-Pagan LM Test: Chi2 (6) = 24.52 Pr= 0.000 Modified Wald Test: Chi2 (4)= 0.84 Pr= 0.932 Wooldridge Test: F(1, 3) = 29.60 Pr> F= 0.012	-0.041 (0.023)
LGFCF	0.586*** (0.017)	0.616*** (0.028)			0.586*** (0.484)
LLF	0.652*** (0.057)	0.086*** (0.028)			0.652*** (0.185)
LRL	-0.997*** (0.224)	0.209*** (0.027)			-0.997 (0.602)
LINF	-0.026*** (0.009)	0.014 (0.023)			-0.026*** (0.003)
LFD	-0.015 (0.012)	-0.008 (0.027)			-0.015 (0.02)
C	8.849*** (2.419)	7.272*** (0.419)			8.849 (7.749)

Source: Author's own estimates
*** shows significance at 1%. The values in brackets represent standard errors.

significant impact on the economic growth of Pakistan. While inflation and financial development show a negative impact on the economic growth of Pakistan. Using Random Effect Model, government stability shows an insignificant impact on the economic growth of Pakistan. While domestic investment, infrastructure and human capital show a positive and significant impact on the economic growth of Pakistan. Whereas, inflation and financial development show an

insignificant impact on the economic growth of Pakistan. Now, in order to choose between fixed and random effect models, Hausman test is applied. The chi^2statiostic shows a value of 35.12 where the probability value is 0.000. This shows that we reject the null hypothesis of random effect model and therefore, fixed effect model is preferred. Given that fixed effect model is preferred, we check for diagnostics on the model.

Using Breusch-Pagan LM test for independence, the Chi^2 statistic shows a value of 24.52 while the p-value is 0.000. Similarly, Modified Wald test for heteroscedasticity shows Chi2 statistic value of 0.84 with p-value of 0.932. Moreover, using Wooldridge test for autocorrelation, the F statistic shows a value of 29.601 with the p-value of 0.012. These statistics show that the fixed effect estimates suffer from the problems of cross sectional dependence and autocorrelation. Given that our estimates suffer from the problems of cross sectional dependence and autocorrelation, Driscol and Kraay Standard Errors approach is applied in order to get robust estimates of fixed effect model. Using Driscol-Kraay Standard Errors approach, the government stability variable shows a negative and insignificant impact on the economic growth of South Asian economies.

The variable government stability is subdivided into three components such as government unity, legislative strength and popular support. The insignificant statistic of government stability shows that democratic governments don't affect economic growth in case of South Asia. There can be various reasons to support this evidence. Firstly, there are lesser democratic regimes or instable political regimes during this targeted time span and this political instability can be a cause of insignificant impact of government stability on economic growth of South Asia. Secondly, political structure is of feudalistic nature. Many democratic political parties consist of feudal capitalists. Now, stable government means that government officials are working in a stable political environment. The government stability hence can lead to corrupt working of government officials such as rent seeking attitude and red tapism etc. Thirdly, the feudal capitalists being in government affect the legislative decisions as well. The rules and regulations can be biased towards protecting their own means rather than promoting public welfare. Lastly, the democratic political parties have has a major support factor. Various political parties tend to exploit this situation by taking advantage of general public through unnecessary developmental projects which do not affect the growth of the people and country. They deliver such projects which are unnecessary

when compared to the real problems of the general public. The delivery of projects is irrelevant and mostly aligns with the kickback mechanism of political class in South Asia. Therefore, the government stability shows a negative and insignificant impact on the economic growth of South Asian economies.

Domestic investment shows a positive and significant impact on the economic growth of South Asian economies. One percent increase in domestic investment leads to an increase of 0.586 percent in economic growth of South Asia. Domestic investment is an important determinant of economic growth. As developing economies mostly suffer from capital shortage, the increase in local investment can insure expansion of domestic output. The expansion of output leads to economic growth. Because selling of domestic output in both domestic and international markets will make local investors better off.

Infrastructure also shows a positive and significant impact on the economic growth of South Asian economies. One percent increase in infrastructure leads to 0.652 percent increase in economic growth in South Asia. Being a developing region, infrastructure development plays an important role in promoting economic activities in the markets. More infrastructure attract more investors in the market which positively affects the economic growth of South Asia.

Inflation plays a negative and significant impact on the economic growth of South Asia. One percent increase in inflation leads to a decrease of 0.026 percent in economic growth of South Asia. The increase in prices in local markets declines the purchasing power of the domestic buyers. As a result, the consumers buy little or lesser commodities which negatively affect the business activity. Moreover, human capital and financial development show an insignificant impact on the economic growth of South Asia.

4.3. Times Series Results

For Pakistan, the role of institutions is also examined. This research also runs a time series model using economic growth as dependent variable with government stability, domestic investment, human capital, infrastructure, inflation and financial development as independent variables. Using Augmented Dickey Fuller (ADF) test for unit root, economic growth, domestic investment, human capital, infrastructure and financial development appear to be integrated on order one while government stability and inflation is level integrated. As the dependent variable is

integrated of order one and two independent variables are integrated of order zero with four independent variables integrated of order one, we resort to ARDL approach. Using, ARDL, we first check for the bounds in order to ensure the co integration between the model. The F-statistic shows a value of 2.66 which lies in the bound at 1% level of significance showing a strong co integration between the variables of interest.

Table 4.3. Augmented Dickey Fuller Unit Root Test Results

Variables	**Level**	**1st Difference**
LGDP	0.59	-3.64**
LGS	-3.84***	-4.11***
LGFCF	-1.58	-3.39**
LLF	0.53	-4.30***
LRL	-1.81	-4.79***
LINF	-4.28***	-5.79***
LFD	-2.05	4.32***
Source: Author's own estimates ** And *** represents significance at 5% and 1%.		

Table 4.4. ARDL Bounds Test

Critical Value Bounds F-statistic= 2.655 K= 6		
Significance	**I0 Bound**	**I1 Bound**
10%	1.99	2.94
5%	2.27	3.28
2.5%	2.55	3.61
1%	2.88	3.99
Source: Author's own estimates		

As there exists co integration between the variables, we check for the long run estimates using ARDL. Government stability shows a positive and significant impact on the economic growth of Pakistan. It means that stable government helps in implementing the government plans of developmental activities in Pakistan. Moreover, unity among the selected candidates of a government promotes economic activities in Pakistan. The results shows that selected governments should be allowed to carry out their plans about economic growth in Pakistan. Similarly, domestic investment, human capital and infrastructure also show a positive and significant impact on the economic growth of Pakistan. This shows that local investors should be encouraged to participate in the economic activities in Pakistan. The human capital also complements the growth process by providing efficient services. Similarly, infrastructure also attracts more investors in Pakistan and more investment means multiple economic activities which promotes economic growth. Moreover, financial development also promotes economic growth in Pakistan. More availability of finance to the local people promotes economic growth in Pakistan. These results are similar to the neo-classical production function that output is dependent upon labor and capital.

Table 4.5. Long Run ARDL Coefficients

Variables	**Coefficients**	**P-value**
LGS	0.04	0.00
LGFCF	0.15	0.00
LLF	1.19	0.00
LRL	0.57	0.00
LINF	-0.00	0.73
LFD	0.01	0.03
C	-4.50	0.02
Source: Author's own estimates		

Table 4.6. Short Run Results

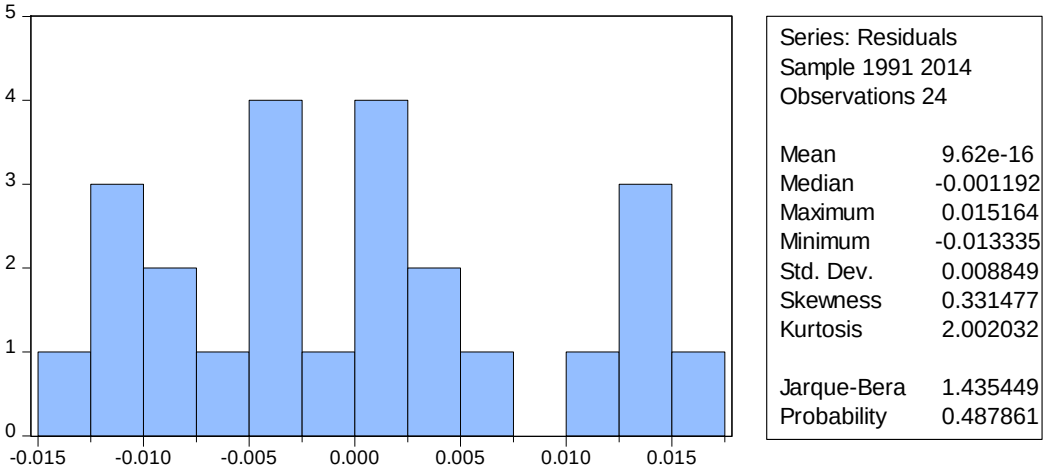
Variables	Coefficients	P-value
LGS	0.01	0.297
LGFCF	0.11	0.007
LLF	1.34	0.000
0.LRL	0.22	0.066
LINF	-0.00	0.501
LFD	0.02	0.006
ECT (-1)	-0.97	0.000
Source: Author's own estimates		

The ECT (-1) term is -0.97 with a p-value of 0.00. This means that about 97% of the adjustment takes place after one year. This also confirms that long run co integration between the variables. But in short run, government stability shows an insignificant impact on the economic growth of Pakistan. It means that government cannot implement its projects in short run and therefore their working can only benefit Pakistan in the long run when their projects are fully completed and implemented. It also means that elected governments should not be politically disturbed during their tenures because it hinders the interaction in an economy and thus can impede economic growth and it is not possible in the short run because government stability only in the long run will significantly affect economic growth in case of Pakistan. It is also true because Pakistan is mostly governed by military dictators and its political history is full of interim governments. Therefore, government stability in the long run can only have positive impacts on the economic growth of Pakistan. While domestic investment, human capital and financial development also show a positive short run impact on the economic growth of Pakistan.

4.3.1. Diagnostics

(i) Normality

Figure 4.1. Normality of Residuals



The JB value is 1.435 with a p-value of 0.487 which shows that there is normality in our model.

(ii) Breusch-Godfrey Serial Correlation Test

In order to check for serial correlation in our model, we applied Breusch-Godfrey test. The F-statistics is 1.697 with p-value 0.243. This means that we do not reject the null hypothesis that there is no problem of serial correlation. Therefore, we conclude that our estimates are free from serial correlation.

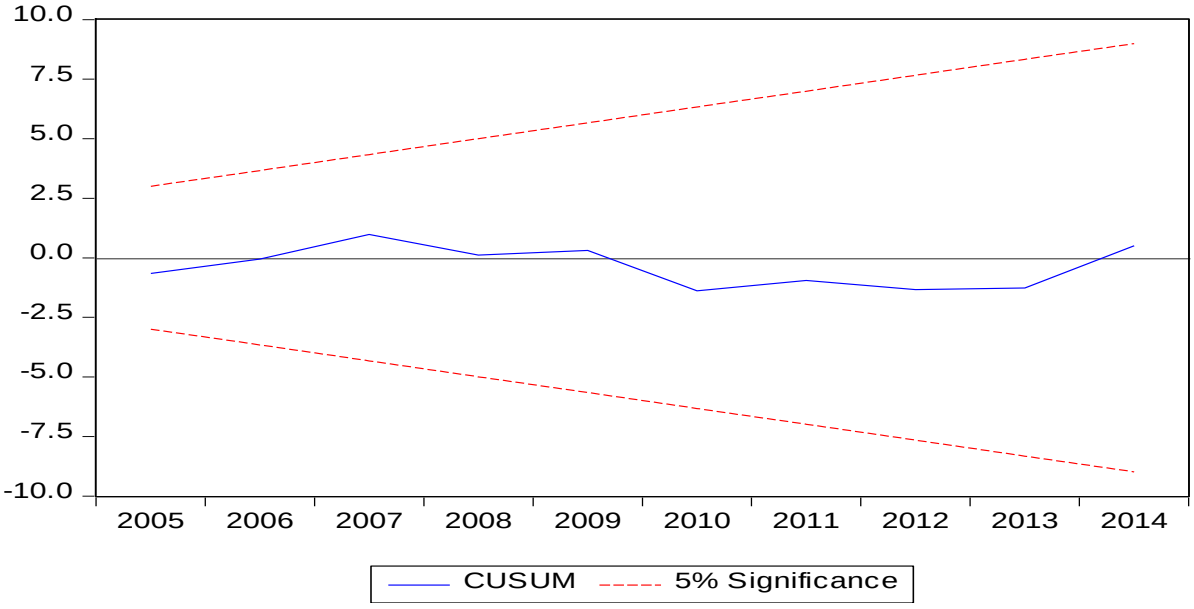
(iii) Breusch- Pagan- Godfrey Heteroscedasticity Test

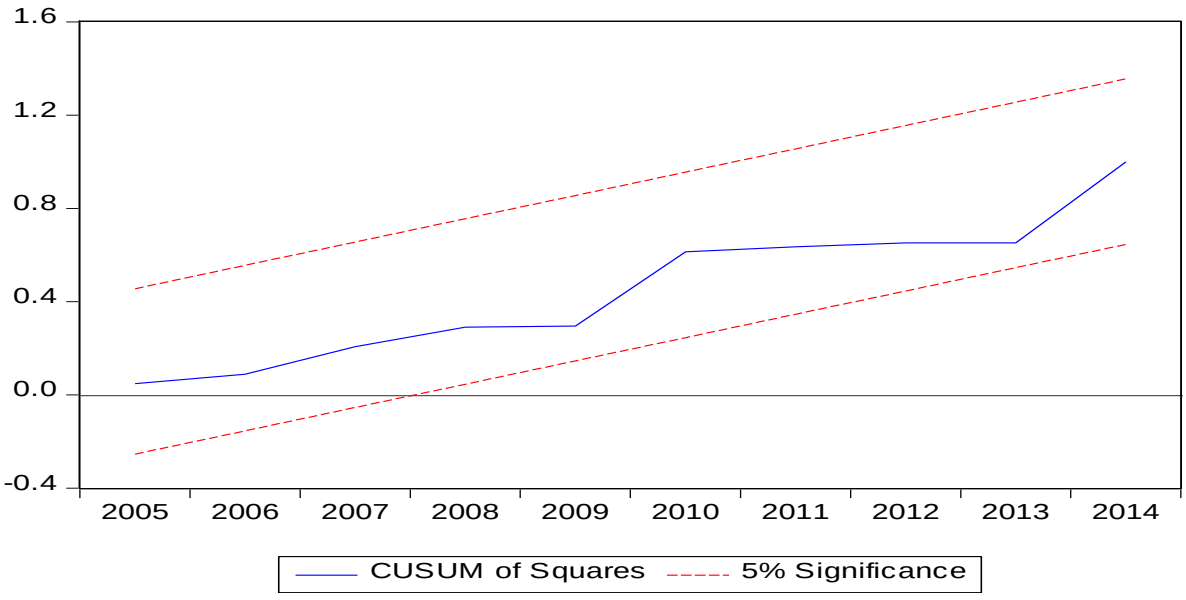
In order to check for heteroscedasticity in our model, we applied Breusch-Pagan-Godfrey test. The F-statistic is 0.676 with p-value 0.67. This means that we do not reject the null hypothesis that there is no problem of heteroscedasticity. Therefore, we conclude that our estimates are free from heteroscedasticity.

(iv) Model Specification

In order to check for the omitted variables, we used CUSUM and CUSUMsq approach. The graphs shown below show that the blue line is within the limit of 5% level of significance. This shows that our model is correctly specified. There is no problem of omitted variables.

Figure 4.2. CUSUM & CUSUM SQ Results





CHAPTER V

SUMMARY AND CONCLUSIONS

This study examined the relationship between institutions and economic growth in case of South Asia such as Pakistan, India, Sri Lanka and Bangladesh as a panel data analysis and specifically for Pakistan in time series framework. For the time span 1990-2014, this study used GDP as explained variable, Government stability, Domestic investment, Human capital, Infrastructure, Inflation and Financial development as explanatory variables. All the variables were in constant 2010 US$ terms. Moreover, natural logarithm of all the variables was taken. For panel data analysis, in order to correct the problems of cross sectional dependence and autocorrelation, we applied Driscoll-Kraay standard errors approach using fixed effect model. The results showed that government stability has an insignificant impact on the economic growth of South Asian economies. But infrastructure and financial development showed an insignificant impact on the economic growth of South Asian economies. While domestic investment and human capital show a positive and significant impact on the economic growth. For time series analysis, Augmented Dickey Fuller (ADF) is applied to check the stationarity of the variables. The ADF test results showed that GDP, domestic investment, human capital, infrastructure and financial development are integrated of order one or I(1) while government stability and inflation are level stationary or I(0). Given that our dependent variable is I(1) and independent variables are integrated of order I(1) and I(0) with no variable of I(2), we applied ARDL approach to examine the relationship between the variables. The critical bound values showed that our model has a long run co integration between them. Further, the LR estimates showed that government stability has a positive and significant impact on the economic growth of Pakistan. Moreover, domestic investment, human capital, infrastructure and financial development also have a positive and significant impact on the economic growth of Pakistan while inflation has a negative and insignificant impact on the economic growth. Similarly, ECT (-1) term is -0.97 and significant. This further provides evidence of the long run relationship between our variables. The SR estimates show that government stability has an insignificant impact on the economic growth of Pakistan. But domestic investment, human capital and financial development also have a positive

and significant impact on the economic growth of Pakistan. The post estimation results also show that our estimates are normal, homoscedastic and free of serial correlation.

POLICY IMPLICATIONS

The present research findings have some useful policy implications. The insignificant impact of institutions in case of South Asia shows that government stability itself is not an important factor for economic growth. The direction of the development plans of the government is also important for economic growth. Whether the development plans are positively affecting the grass root level or not. In case of South Asia, the political structure is mainly feudalistic in nature where political agents are landlords and they secure their own interests after coming to power. Therefore, for South Asia, this research provides policy for generating a representative democracy to achieve sustainable economic growth through stability of selected governments. Moreover, in case of Pakistan, governments should be given proper time span to implement their developmental projects. The political instability should be minimized to provide a conducive environment to the selected governments to work in order to achieve continuous economic growth in Pakistan. In Pakistan, elected governments should be allowed to complete their tenures. The policy makers should structure policies to strength elected governments in Pakistan.

Limitations and Future Research

Although, this research have its positives but no research is free of limitations. Firstly, this research is limited in terms of time dimension. Secondly, sector level impact of institutions on sector specific growth would be more meaningful for policy design. For future research, sector specific analysis would be worthwhile because all these economies are developing in nature and they mostly export raw materials or semi-finished items. Therefore, it would be better to target the role of institutions on the sector specific growth in these economies which can provide policy implications to boast exports of these economies.

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