UNIVERSITAT DE BARCELONA

Essays on institutional quality, macroeconomic stabilization, and economic growth in International Monetary Fund member countries

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PhD in Economics

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To the pursuit of knowledge for bringing welfare

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Table of Contents

Chapter 4: IMF programmes and institutional quality determinants: economic scenarios in Pakistan **69**

Chapter 5: Concluding remarks **101**

References **107**

List of Tables

List of Figures

Abstract

This study is motivated by the overall poor performance of International Monetary Fund (IMF) programmes in recipient countries in terms of economic growth consequences, and tries to explore the relevance of institutional determinants for economic growth in these programme countries. The analysis, at the same time, also takes into consideration the claim by New Institutional Economics (NIE) literature, which points out an overall positive consequence of institutional quality determinants on economic growth for countries in general.

Taking a panel data of IMF member countries, the thesis primarily focuses on the IMF programme countries, during 1980-2009; a time period during which the number of IMF programmes witnessed an increasing trend. Firstly, important determinants of economic- and political institutional quality in IMF programme countries are estimated by applying the System-GMM approach, so as to find significant determinants among them. Here, a parliamentary form of government, aggregate governance level, civil liberties, openness, and property rights all enhance overall institutional quality. Specifically, greater monetary- and investment freedom are conducive for political institutional quality, while military in power impacts negatively. Moreover, economic growth is conducive for enhancing economic institutional quality. Thereafter, the impact of the significant institutional determinants is then estimated on real economic growth, both directly, and also indirectly, through the channel of macroeconomic stability. Results mainly validate that institutional determinants overall play a positive role in reducing macroeconomic instability, and through it, and also independently, enhance real economic growth.

In the last part of the thesis, Pakistan is selected as a representative example of a frequent user of IMF resources. Here, by applying the Vector Autoregression (VAR) model techniques, various counterfactual scenarios are estimated for a period of 1980-2014, to see impact of an institutional determinant, KOF index of globalization on macroeconomic instability and real economic growth. Results highlight that through enhanced focus on institutional quality determinants, macroeconomic instability can be reduced, and hence higher growth rate of GDP can be achieved.

Chapter 1

Introduction

1.1 The IMF and its changing role

The 1930s saw the Great Depression, and the response of various countries like raising trade barriers and devaluing currencies (to boost exports) put cracks in the monetary cooperation internationally. To correct this trend and to ensure that oversight is kept for avoiding such happenings in the future, in 1945 at Bretton Woods (USA), International Monetary Fund (IMF; or simply the 'Fund') was formed. The Fund came into being through the Articles of Agreement[1], which were signed in 1945, bringing IMF into formal existence.

IMF oversaw that the member countries adhered to the par value system or the Bretton Woods system, whereby members pivoted their currencies to US dollar, and only made adjustment in their pegged rates for correcting fundamental balance of payments (BOP) disequilibrium (Bird, 2003). With the dissolution of the Bretton Woods system during 1968-1973[2], the Fund's oversight role got limited in the presence of flexible exchange rate regime. Having said that IMF created an Oil Facility to deal with the issue of huge increase in oil prices in the early 1970s, whereby through the Facility surplus oil related revenues of oil exporting countries were re-routed to oil importing countries to deal with balance of payments crisis in the oil importing countries. Surplus oil revenues also meant commercial banks had a large pool of loanable funds for countries in BOP crisis, but with the rising of floating exchange rates by the end of 1970s, meant interest payments became a problem for these countries (which included developing countries). The Third World debt crisis saw an increase in IMF's role who lent to these countries, under IMF programme. Although borrowing related

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[1] http://www.imf.org/external/pubs/ft/aa/index.htm
[2] http://www.imf.org/external/about/histend.htm

conditionalities[3] were first introduced in early 1950s by IMF to address fears of United States due to its underwriting of Fund's operations, the role of conditionality enhanced with IMF's greater coverage of lending operations, in terms of more member countries helped in resolving their BOP crisis. Hence, it could be seen that the oversight role of the IMF, had enhanced to correcting BOP related issues (through Structural Adjustment Facility (SAF) in 1986), and correcting BOP related issues and enhancing economic growth through Enhanced Structural Adjustment Facility (ESAF)[4]. Thus, the enhancement of scope meant that IMF's focus was now both macroeconomic issues and economic growth of recipient countries, apart from the primarily initial oversight role.

1.2 IMF programmes and their consequence

The Third World debt crisis caused many developing countries in problem to turn away from private banks to IMF lending, which meant greater role for the IMF, and in turn greater scrutiny of IMF programmes. In fact, with the fall of Communism in early 1990s and the move of those countries towards market economy system, led to further increase in IMF's clientele, and for these countries a 'Systematic Transformation Facility' was created by the Fund (Killick, 1995). According to Bird (2003) the design of the IMF programme came under criticism for tilting heavily on the side of the Monetarist way of thinking, since more focus was placed on the demand side of the economy, and less on the supply side, and in that sense the programme was too rigid to accommodate the specific needs of a particular country; and New structuralists found the programme conditionalities to have stagflationary consequences for recipient countries. In fact the opening up of ESAF window (and previously of SAF facility), which was later renamed in 1999 to Poverty Reduction and Growth Facility due to expansion of Fund's role to poverty reduction, was a response by IMF to focus more on supply side- and microeconomic measures (Bird, 1996).

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[3] According to Barro and Lee (2005, p. 1248), the process whereby quarterly installments are released to programme countries when they meet a pre-decided set of performance benchmarks, is referred to as the process of conditionality.
[4] http://www.imf.org/external/np/exr/chron/chron.asp

Yet, the response of IMF to deal with the supply-side related criticism has remained below satisfaction. Although according to Schadler *et al.* (1993) internal observations of IMF considered this response to be positive, academics/researchers like Killick (1995) criticized IMF's underlying basis for reaching such a conclusion. In fact, an independent evaluation of ESAF by IMF was more critical than the earlier positive internal evaluations, but according to *Botchwey et al.* (1998) IMF only reluctantly and partially accepted the findings of the independent evaluators. The consequence of all this has been that overall during the last three decades or so, Fund programmes have not allowed recipient countries to achieve sustained macroeconomic stability (Evrensel, 2002; Easterly, 2005), and have at most been neutral for economic growth (Haque and Khan, 1998; Bird, 2001; Barro and Lee, 2005; Bird, 2007; Arpac *et al.*, 2008).

1.3 New Institutional Economics and IMF programmes

Williamson (1975) coined the term of 'New Institutional Economics' (NIE)[5] (Chavance, 2009, p. 45). His approach was critical of neo-classical Economics, since it did not consider the importance of institutions, the underlying role of transaction cost[6] and firm (Chavance, 2009, p. 45; Groenewegen *et al.*, 2010, p. 65). NIE agrees with neo-classical Economics that economic agents look to maximize their utility (or profit), but unlike the neo-classical and monetarist schools of thought, they find the rationality of economic agents to be bounded in the wake of opportunistic behaviour and asymmetric information.

In such an environment, there will be costs associated firstly with reaching a price mechanism that truly reflects the buyers and sellers potential in markets and, secondly costs will be involved in successfully negotiating contracts among individual economic agents or groups (Chavance, 2009, p. 45). Coase (1937, p. 388) pointed out that in case of high transaction costs, it may be more suitable for an economic agent to move away from the

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[5] NIE is in contrast to the Original Institutional Economics school, which is mainly based on the works by such institutional economists as Thorstein Veblen (1857-1929) and John R. Rommons (1862-1945) (Groenewegen *et al.*, 2010, p. 64, 65 and 87).
[6] Transaction costs included costs related with gathering and inspecting information, along with pertaining to enforcement, among others (Dahlman, 1979, p.148).

governance structure of a market to a governance structure of a firm, if the later helps the agent in economizing such costs better than the market. Institutions help evolve these governance structures that help coordinate markets and firms so that transaction costs could be optimally reduced (Chavance, 2009) and in doing so (unlike neo-classical school of thought) give greater role to government, both for regulation and for directly involving themselves in markets and/or firms if need be, depending on a particular economy and given sector(s) within it. These specifications of NIE, therefore, also highlight the importance for reform policy formulation, which should not be one-size-fits-all, but should be 'context specific' depending on the particular nature, composition and requirement of an economy.

Institutions are therefore, seen as vital in dealing with opportunistic behaviour and information related costs (Groenewegen *et al.*, 2010, p. 13-24 and 36-38). While Williamson see institutions only in the nature of formal rules that formulate governance structures (in public and private realms and both for markets and firms, and their hybrid[7]), another important proponent of NIE, Douglass North considers them as composed of formal (written rules) and informal constraints (unwritten and communicated by society as social norms, behaviour, and culture) (Chavance, 2009, p.79; North, 1990, p. 4, 37 and 47). Hence, institutions in the shape of laws and conventions, see greater role of government in realizing an environment where contracts are abided by, and property rights[8] are distributed and guarded adequately against any possible opportunistic behaviour. NIE points out that through institutions, different governance structures (within government and private sectors) are evolved that help reduce transaction costs. Through such governance structures, pricing mechanism in markets and firms are improved, costs are adequately reduced for negotiating and implementing contracts, and incentives and checks are put in place to help reduce inefficiencies in distribution and enforcement of property rights (Groenewegen *et al.*, 2010, p. 118-20). All this is expected to reduce

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[7] A hybrid is such a governance structure that is characterized by features of both the firm and market (Groenewegen *et al.*, 2010, p. 125).
[8] Eggertsson (1996; p.7) points out that institutional economics defines property rights as an actor's right to use assets that are valuable (Alchian, 1965).

4

transaction costs, which in turn feed into lowering overall production costs, incentivizing greater investment, and positively affecting economic growth. Bird (2003, p. 5) indicated that IMF programmes were strongly influenced by the Monetarist thought process, whereby showing greater tilt towards the demand side of the economy rather that the supply side. Looking more deeply into the basic formulation of IMF programmes, Killick (1995, p. 129) indicates that the analytical framework of these programmes is based on the Polak Model (Polak, 1957). As per this model, imbalance in balance of payments results from excessive creation of domestic credit over money (supply or) demand (usually resulting as a consequence of excessive financing of budget deficit). Bird (2003, p.5) pointed out that traditional macroeconomic thinking-based conditionality in IMF programmes overlooked the important role of government as a 'crowding-in' factor (especially in the case of developing countries), and according to empirical evidence, programme assumptions produced little impact on macroeconomic variables in IMF programmes, on one hand, and as per New Structuralists resulted in stagflationary consequences for programme countries.

Both neo-classical and Monetarist schools of thought see virtually automatic clearing of markets, since they see a world where economic agents show no opportunistic behaviour, are rational and that the information they need to reach utility (or profit) maximizing (or cost minimizing) decisions entail no costs (Groenewegen *et al.*, 2010, p.14-15). Hence, one sees limited role of government and institutions in the world of this traditional economic thinking. Since, IMF programmes borrow heavily from them, therefore, the conditionalities primarily focus on monetary aggregates targeting on the demand side of the economy, and have not concerned themselves much with institutions on the supply side of the economy. Empirical evidence, in particular, during the last three decade or so, indicates that institutions matter for economic growth (Groenewegen *et al.*, 2010, p. 36-38; Rodrik *et al.*, 2002; Hall and Jones, 1999; Acemoglu and Johnson, 2005; Afonso and Jalles, 2011). Although IMF has also internalized this role of institutions to some extent and has tried to evolve their programmes to improve the focus on the supply side of the economy, but once again their over-indulgence in the traditional economic thinking, has not allowed them to move away to a reform agenda that understands the

importance of improving institutional quality determinants in programme countries.

1.4 Motivation

NIE literature indicates institutions matter for economic growth. Empirical evidence of the last three decades or so indicates that countries which have focused reform agenda on improving institutional quality, have witnessed an overall positive impact of this on economic growth. This background motivates an analysis into understanding the role determinants of institutional quality play on economic growth in IMF programme countries. A positive consequence in this regard should underline the importance of institutions to IMF, so that their future programmes base themselves more on the NIE framework, something which it is hoped will help reverse the previously poor record of IMF programmes in terms of economic growth consequences. It may be indicated here that the in the thesis, both formal and informal aspects of institutions will be taken into account.

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Chapter 2

Determinants of institutional quality: a case study of IMF programme countries

2.1. Introduction[9]

The effectiveness of the conditionalities[10] of IMF (International Monetary Fund) programmes (mostly restricted to addressing macroeconomic stability concerns) on recipient countries has come under severe criticism, especially in terms of their consequence for economic growth (IEO, 2007; Bird and Willett, 2004), something that the IMF has also realized along the way (IMF, 2005a; IEO, 2007).

Notwithstanding the level of implementation of IMF programmes by recipient countries (an area that is still under-researched), research has shown mostly a neutral or negative program impact on economic growth; and to look beyond the neo-classical Economics underlying basis of these programmes (Kuncic, 2014). Such behavioural assumptions consider a zero-transaction cost[11] world, and therefore do not see much role of institutions, which according to NIE (New Institutional Economics) are instrumental in reducing the costs involved, incentivize private property[12]

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[9] There are two earlier versions of this paper can be found at 'Munich Personal RePEc Archive'(http://mpra.ub.uni-muenchen.de/). The first version was placed there on 11th November, 2013 (https://mpra.ub.uni-muenchen.de/secure/cgi/users/home?screen=EPrint%3A%3AView&eprintid=51344), while the second version on 3rd June, 2014 (https://mpra.ub.uni-muenchen.de/secure/cgi/users/home?screen=EPrint%3A%3AView&eprintid=51409).

[10] According to Barro and Lee (2005, p. 1248), the process whereby quarterly installments are released to programme countries when they meet a pre-decided set of performance benchmarks, is referred to as the process of conditionality.

[11] Transaction costs included costs related with gathering and inspecting information, along with pertaining to enforcement, among others (Dahlman, 1979, p.148). Asymmetric information and heterogeneous nature of individual perceptions about how the world works, means transactions have associated costs; which are reduced by institutions (Harriss *et al.*, 1995; North,1994, p. 17).

[12] Eggertsson (1996; p.7) points out that institutional economics defines property rights as an actor's right to use assets that are valuable (Alchian, 1965).

protection, innovation and investment, and in turn help boost economic growth.

Given this background, Kuncic (2014), for example, advocated the adoption of NIE framework for analyzing the dynamics and consequences of social (and other) interactions among economic agents. Moreover, most empirical research conducted from 1995 to 2004 pointed towards the presence of significant relation between institutional quality and economic performance (Ugur, 2010).

The current study aims to find out significant institutional quality determinants, in the light of NIE framework, in programme countries of IMF (countries that have been under an IMF programme at one time or the other), with the aim to influence IMF in enhancing the scope of its future programmes by considerably increasing focus on institutional determinants; which is likely to result in an improved impact of such programmes on economic growth of programme countries.

Furthermore, the study also intends to focus on prolonged users[13] (member countries that have been under the IMF programmes for longer periods of time) as a sub-group, whose numbers have increased over the years since the breakdown of the Bretton Woods system (Barro and Lee, 2005; IEO, 2002). Here also, the intention is to reach at determinants of institutional quality that are significant. Focus on the prolonged users is all the more necessary, since there is a rising concern (in terms of moral hazard issue) that such countries have under-performed in terms of carrying out hard economic reforms at the back of relatively easily available IMF resources (Evrensel, 2002).

Hence, all IMF member countries (188 to be precise[14]) have been taken, along with the two sub-groups, namely programme countries, and prolonged users. Time period under review is from 1980 (when the role and penetration of IMF programmes increased) to 2009.

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[13] According to IEO (2002, p. 9 and p. 24) countries fall under the prolonged user category if they remain under an IMF programme for at least seven years in a decade.
[14] Complete list at: https://www.imf.org/external/np/sec/memdir/memdate.htm

10

The structure of the study is as follows: Section 2.2 reviews important related literature on the topic under discussion, data and methodology are discussed in Section 2.3, while estimation and results are focused upon in Section 2.4. The last section (which is Section 2.5) concludes the study.

2.2. Literature Review

Literature sees IMF's financial programming techniques to be of the nature of over-simplistic/ one-size-fits-all, asking in turn to revisit the underlying basis of programmes (Buira, 1983; Bird, 2001; Bird, 2007). Such an inflexible nature is therefore unsuitable for the varied nature of programme countries (Stiglitz 2001; Vreeland, 2006; Abbot *et al.*, 2010), which proves to be too conventional and rigid specifically for the developing countries, and remains a reason for neutral impact on economic growth (Abbot *et al.*, 2010).

In the same vein, Nsouli *et al.* (2004) found absence of focus on institutional enhancing factors in evaluating programme success rate; furthermore indicated better institutional quality and conducive political environment had positive consequences for macroeconomic outcomes, and programme implementation rates. Similarly, Arpac *et al.* (2008) conducted a study covering 95 countries and a time period of 1992-2004 to point out that programme implementation record was better where countries had more trade openness (in turn, a significant institutional determinant). Also, the study suggested to IMF to focus on domestic politics also while forming expectations about the extent of programme implementation in a country.

Importance of institutions has been underlined for a long time. Adam Smith (1976, p. 910)[15] showed interest in institutions when he highlighted that a good judicial system (in other words, rule of law, which is an important institutional factor) was a pre-requisite for economic activity. Furthermore, he pointed out that the underlying differences between countries and regions were explained by institutional factors (Smith, 1976, p. 405).

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[15] Adam Smith's book, 'An Inquiry into the Nature and Causes of the Wealth of Nations' was originally published in 1776.

Sadly, Neo-Classical Economics forgot this initial understanding by ignoring institutions. Rather it assumed a free-market, perfect competition basis for Pareto optimality or efficiency[16] and took a production function that included labour and capital (Ugur, 2010). Such a technical production function is incompatible with regard to the existence of property rights and efficient contract enforcement (Rodrik, 2000), and does not explain the difference between developing and developed world (Ugur, 2010).

Attention on the significance of institutions was later on re-emphasized in the decade of 1980s[17], and especially during the 1990s from lessons obtained from the liberalization reform. Hence, it was realized that institutions were required for incentive system of price signal to work for increasing national welfare (Rodrik, 2000), and that they channelized investment away from rent-seeking behaviour to one that promoted creativity, and greater production (Shirley, 2008) . It was also pointed out that small changes at the margins helped improve economic growth (Rodrik, 2005). At the same time it was highlighted that while traditionally institutional change has been seen to happen gradually, it was nevertheless not the only way for such a change to take place, but rather also at a revolutionary pace as for example was demonstrated by East Asian economies (Quibria, 2002).

Shirley (2008) highlighted that NIE literature identified four sources for institutions being underdeveloped. Firstly, a legacy of poor institutions from colonizers, and which in turn needed to be set right as one of the complementing ways to enhance macroeconomic stability (North, 1990; La Porta *et al.*, 1997; Acemoglu *et al.*, 2001a, Acemoglu *et al.*, 2003). Secondly, on the contrary where the country had endowments, colonizers did develop institutions to extract from local resources. Moreover, there also existed a positive relation between institutional development and the extent of settlement of colonizer (which in turn relied on the level of livability of colonizers locally); that is, the higher the extent of such a settlement, the greater the level of institutional development, as could be

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[16] In such a situation, welfare of one person can only be increased by decreasing someone else's welfare (Groenewegen *et al.*, 2010, p.16).
[17] By Kormendi and Meguire (1985), and Scully (1988) (Ugur, 2010, p. 9).

seen in the case of Australia or Canada for that matter, among others (Acemoglu *et al.*, 2001a and b; Acemoglu and Robinson, 2012).

Thirdly, lack of political competition outside and inside of the country resulted in little motivation for leaders to build institutions for peoples' benefit at large, where such leaders faced virtually no strong opposition for building institutions that served their own vested interests (Nugent and Robinson, 2002). Fourthly, (at times) certain beliefs and norms discouraged development of markets and institutions (North, 1994 and 2004; Knack and Keefer, 1997). Moreover, North (1990, p. 110) indicated that the institutional incentive system of the developing countries did not induce productive activity, and that is the underlying reason for the level of poverty there (being on the higher side).

Many studies have pointed out the important role played by improvement in institutional quality in enhancing economic growth (for example, Rodrik *et al.*, 2002; Hall and Jones, 1999). Specifically, Acemoglu and Johnson (2005, p. 953) pointed out that income per capita was substantially higher in those countries, as compared to others, where institutions protected property rights more (a similar result highlighted by Afonso and Jalles (2011)).

Political- and economic institutions are the two main types of institutions (IMF, 2005b; Joskow, 2008; Kuncic, 2014), where the former mainly encompass political environment/agents (for example, rules of elections, voters, extent and nature of power of government, etc.), while the later constitute the environment that enable functioning of markets (for instance, property rights). Moreover, 'inclusive economic institutions' work towards enhancing participation of people in economic activity through provision of better protection of property rights and other institutional determinants of a facilitating environment, as against 'extractive economic institutions', which transferred resources from the many to the group(s) that forms this collusion (to benefit it, in turn); furthermore, an inclusive/extractive economic institution resulted because of an inclusive/extractive political institutional setup (Acemoglu and Robinson, 2012, p. 74-82; Acemoglu, 2006; Acemoglu, 2008).

2.3. Data and Methodology

2.3.1. *Theoretical design*

The present study is based on NIE's methodological framework, in which institutions are an outcome of rules and regulations that human beings establish, to act as constraints for governing the way humans deal with each other (North, 1990, p. 3). According to Williamson (1975) interaction takes place in either markets, firms, or their hybrid[18], while the choice of a particular governance structure, in this regard, depends where the transaction costs are getting minimized the most (Chavance, 2009, p. 45 and 46; Groenewegen *et al.*, 2010, p. 123-25). Institutions encompass both formal and informal constraints that shape the way humans interact (North, 1990, p. 4), where the former are composed of written rules (pertaining to politics, economy, and contracts, among others; North, 1990, p. 47), while the later depict the unwritten (and communicated by society) social norms, behaviour, and culture (North, 1990, p. 4 & p. 37). While Williamson (1975) only considers formal rules, North (1990) considers both formal and informal constraints. In this study, both formal and informal aspects of institutions will be taken into account.

According to North (1990, p. 4 & 5) while institutions are the rules, which govern the game, the agents who play the game are called organizations. These evolve as a consequence of a particular institutional framework, and in turn, influence that institutional framework; hence, both institutions and organizations interact to bring institutional change. Also, North (1994, p. 5) points out that institutional change is a result of choices that are in turn influenced by the changes that happen externally (outside a particular society or system), and the learning that takes place internally (within a society or system).

While costs involved in personal exchange are reduced by traders through relying on private means (Williamson, 1985), and through trust and

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[18] A hybrid is such a governance structure that is characterized by features of both the firm and market (Groenewegen *et al.*, 2010, p. 125).

cooperation (Knack and Keefer, 1997), impersonal exchange required in addition, enforcement mechanisms implemented by state (Milgrom *et al.*, 1990). Similarly, Coase (1992, p. 197) emphasized the importance of lowering transaction costs for fostering exchange in the economy. Positive institutional change, therefore, means improvement in institutional quality, eventually leading to economic growth.

According to NIE literature, institutions are both political and economic, where one influences the other to bring overall change in institutional quality (Acemoglu, 2006; Acemoglu and Robinson, 2008; Acemoglu and Robinson, 2012). Therefore, the current study analyzes institutional quality in terms of economic- and political institutional quality (in line with for example IMF, 2005b), in an effort to find out significant political/governance-, and economic institutional determinants for enhancing overall institutional quality in IMF programme countries. In the wake of NIE literature that supports the flow of positive causation from improvement in institutional quality to economic growth (Ugur, 2010), and in the light of criticism of previous IMF programmes in terms of their lack of consequence for economic growth (IEO, 2007; Bird and Willett, 2004), such a conclusion is supposed to help IMF make necessary adjustments in its FPP to enhance focus on determinants of institutional quality.

2.3.2. Sample

While overall IMF member countries stand at 188[19], the sample is composed of 129 'programme countries', which are those that have adopted at least one IMF programme during 1980-2009[20]. The reason behind taking this sample in the first place, is based on the premise that one of the main reasons why IMF programmes have under-performed in terms of their impact for economic growth, is due to their insufficient focus on improving institutional quality (an area, which has been shown in NIE literature to have positive consequences for economic growth).

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[19] Complete list of IMF member countries is at: http://www.imf.org/external/country/index.htm

[20] Information on whether a country has been under IMF program or not has been taken from IMF website (http://www.imf.org/external/np/fin/tad/exfin1.aspx).

Table 2.1. Prolonged users

Sr.#	Country Name	Years under IMF programme				Continent	Prolonged user (yes/no)			
		1980-1989	1990-1999	2000-2009	Total		1980-1989	1990-1999	2000-2009	1990-2009
1	Mali	4	9	10	23	Africa	0	1	1	1
2	Senegal	6	8	9	23	Africa	0	1	1	1
3	Mexico	6	5	10	21	N. America	0	0	1	0
4	Mozambique	3	9	9	21	Africa	0	1	1	1
5	Niger	6	5	10	21	Africa	0	0	1	0
6	Madagascar	6	5	9	20	Africa	0	0	1	0
7	Malawi	4	8	7	19	Africa	0	1	1	1
8	Mauritania	5	8	6	19	Africa	0	1	0	0
9	Tanzania	3	7	9	19	Africa	0	1	1	1
10	Uganda	3	9	7	19	Africa	0	1	1	1
11	Benin	1	7	10	18	Africa	0	1	1	1
12	Burkina Faso	0	8	10	18	Africa	0	1	1	1
13	Cameroon	2	7	9	18	Africa	0	1	1	1
14	Albania	0	7	10	17	Europe	0	1	1	1
15	Argentina	5	8	4	17	S. America	0	1	0	0
16	Bolivia	3	9	5	17	S. America	0	1	0	0
17	Kyrgyz Republic	0	7	10	17	Asia	0	1	1	1
18	Guyana	0	10	6	16	S. America	0	1	0	0
19	Sierra Leone	1	6	9	16	Africa	0	0	1	0
20	Armenia	0	6	9	15	Europe	0	0	1	0
21	Chad	3	7	5	15	Africa	0	1	0	0
22	Pakistan	1	7	7	15	Asia	0	1	1	1
23	Rwanda	0	5	10	15	Africa	0	0	1	0
24	Georgia	0	6	8	14	Europe	0	0	1	0
25	Guinea	3	7	4	14	Africa	0	1	0	0
26	Philippines	6	7	1	14	Asia	0	1	0	0
27	Zambia	2	3	9	14	Africa	0	0	1	0
28	Bulgaria	0	8	5	13	Europe	0	1	0	0
29	Burundi	3	2	8	13	Africa	0	0	1	0
30	Dominican Republic	2	4	7	13	N. America	0	0	1	0
31	Ghana	0	5	8	13	Africa	0	0	1	0
32	Jordan	2	8	3	13	Asia	0	1	0	0
33	Turkey	1	3	9	13	Asia	0	0	1	0
34	Dominica	5	0	7	12	N. America	0	0	1	0
35	Honduras	0	7	5	12	N. America	0	1	0	0
36	Nicaragua	0	4	8	12	N. America	0	0	1	0
37	Tajikistan	0	4	8	12	Asia	0	0	1	0
38	Lao	1	7	3	11	Asia	0	1	0	0
39	Macedonia	0	7	4	11	Europe	0	1	0	0
40	Panama	4	7	0	11	N. America	0	1	0	0
41	Mongolia	0	7	3	10	Asia	0	1	0	0
42	Serbia	0	1	8	9	Europe	0	0	1	0
43	Algeria	1	7	0	8	Africa	0	1	0	0
44	Russian Fed.	0	7	0	7	Asia	0	1	0	0
Total							0	28	28	12

Note: A prolonged user is represented by 1, and 0 otherwise; indicated under prolonged user heading above.

Moreover, as an extension, the sample of prolonged users has also been taken to analyze, in particular, significant institutional determinants in these countries (for the same time period). Hence, during 1980-2009, around one-third of them (44 to be precise) were prolonged users (listed in Table 2.1 in descending order of number of years under IMF programme). Hence, Mali and Senegal have been the most prolonged users, having each been under an IMF programme for a total of 23 years overall in the sample period. Geographical mapping indicates that almost half of the prolonged users belonged to the continent of Africa, followed by Asia (at around one-fifth of the total prolonged users); places that have otherwise also seen prevalence of absolute poverty on the higher side. This, in turn, opens up possible area for future research, to understand the consequences of IMF resources for poverty and the economy overall for prolonged users of these two continents.

Further analysis of Table 2.1 indicates that during the decade of 1980s there were surprisingly no prolonged users. At the same time, the next two decades of 1990s and 2000s, respectively, saw a mushrooming of prolonged users (28 countries to be precise, falling under this category, in each decade). Moreover, it could be seen that 12 countries remained prolonged users in both the 1990s and 2000s; pointing towards a possible prolonged user syndrome through the likely existence of moral hazard, whereby countries may have relied more on IMF resources than going for hard economic reforms.

2.3.3. Data and variable description

Economic institutional quality. Following IMF (2005b), this will be measured using the proxy of Economic Freedom Index (EFI) of the Cato Institute[21], which captures five aspects of government size, the makeup of the legal framework and the extent of protection of property rights, along with access to sound money, the level of liberty to trade internationally, and business, labour, and credit rules and regulations. Data is taken from 1980-2009 (5-yearly up till 2000, and yearly after that). Ahmadov *et al.*

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[21] http://www.cato.org/economic-freedom-world

(2013) also employed EFI by Gwartney and Lawson (2003). The reason for employing this economic institutional proxy is the larger diversity of aspects that it includes, than some of the other proxy variables that have been used in previous studies like Investment Profile (International Country Risk Guide; ICRG), and Freedom of the Press: Economic Environment (Freedom House).

Political institutional quality. This will be measured using the proxy of Polity II (from the Polity IV dataset of Marshall *et al.*, 2011), which captures 'political structures and regime change'[22], and has been taken (like for example by Afonso and Jalles, 2011) to indicate, which variables significantly determine political institutional quality[23]. Data is taken for the time period 1980-2009. This has been preferred due to the larger extent of its coverage of political environment, than some of the other political institutional proxy variables that have been used in earlier research like Democratic Accountability (International Country Risk Guide), Corruption Perception Index (Transparency International), and Political Terror Scale (Political Terror Scale).

Political/governance variables. A host of variables are taken from the Database of Political Institutions[24], to overall see the impact of electoral rules and political system. Variables analysed here include, i) regime (is a dummy variable indicating 0 for presidential, and 1 for parliamentary form of government; also taken in the study by Afonso and Jalles, 2011), ii) military (chief executive a military officer or not; existence of it is represented by 1, 0 otherwise), iii) Herfindahl Index Government (to basically reflect the strength/proportion of government seats in parliament), and iv) Herfindahl Index Opposition (indicates the extent of representation of opposition in parliament).

An aggregate governance indicator has also been included in the study as a regressor. This has been calculated as a simple average of the five

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[22] http://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/9263?q=Polity IIandsearchSource=icpsr-landing
[23] http://www.systemicpeace.org/inscr/inscr.htm
[24] http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:20649465~pagePK:64214825~piPK:64214943~theSitePK:469382,00.html

18

indicators. These five variables are from Worldwide Governance Indicators (WGI; World Bank)[25], which, in turn, have been produced by Kaufmann, Kraay, and Mastruzzi (KKM, 2010)[26]. These five indicators cover aspects with regard to the level of voice and accountability (found significant in IMF, 2005b, for improving institutions), effectiveness of government, the situation of rule of law, the quality of regulations, and the extent of control of corruption.

Data on civil liberties is taken from Freedom in the World (publication of Freedom House)[27]. Here, the least rating of degree of freedom is indicated by 1, while the highest rating is represented by 7.

Economic variables. The first regressor here is openness, and a broad proxy that has been used here is KOF Index of Globalization[28]. Data is taken for the available time period of 1980-2009. Openness is indicated in literature to be positively related with enhancing institutional quality (Rodrik *et al.*, 2002; IMF, 2005b). Although Alonso and Garcimartin (2013) did not find the impact of openness to be significant, KOF Index of Globalization, with its multidimensional approach, has been included for checking possible significance.

Measures of economic freedom and prosperity are taken from the Index of Economic Freedom[29] to see their influence on institutional quality. Sub-indices taken here are, monetary-, fiscal-, and investment freedom, along with property rights. Unfortunately, data is only available since 1995; data is taken up till 2009.

Lastly, log real GDP (at constant 2005 US$; and taken from World Development Indicators (WDI)[30]) has been included in the study, as one of the regressors to see its impact on both economic- and political institutional quality.

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[25] http://data.worldbank.org/data-catalog/worldwide-governance-indicators
[26] http://info.worldbank.org/governance/wgi/index.aspx#home
[27] http://www.freedomhouse.org/report-types/freedom-world
[28] http://globalization.kof.ethz.ch/
[29] http://www.heritage.org/index/explore
[30] http://data.worldbank.org/data-catalog/world-development-indicators

Endogeneity. NIE literature highlights the presence of the endogeneity issue in the case of institutions (for example Acemoglu *et al.*, 2001a). In the current study, variables that are expected to be affected by this issue include property rights, aggregate governance indicator, fiscal freedom, monetary freedom, and real GDP for overall institutional quality. At the same time, variables expected to have endogeneity issue with respect to economic institutional quality include investment freedom and KOF index of globalization; while civil liberties in the case of political institutional quality. Moreover, as lagged dependent variable is correlated with the error term, therefore, lagged EFI and lagged Polity II may cause endogeneity problem in the regression.

2.3.4. Econometric methodology[31]

Institutional quality will be determined using the following basic model:

$$IQ_{it} = f(IQ_{i,t-1}, X_{it}, Z_{it}) + \omega_{it} \qquad [1]$$

where, institutional quality is indicated by IQ_{it}, lag of the dependent variable indicated by $IQ_{i,t-1}$, and variables with regard to political/governance aspects by the vector of X_{it}. Moreover, economic variables are indicated by the vector of Z_{it}; error term by ω_{it}.

While Eq[1] gives the overall framework, the next two equations with regard to economic- and political institutional quality, respectively, are:

$$EIQ_{it} = \beta_i + \beta_1 EIQ_{i,t-1} + \beta_2 X_{it} + \beta_3 Z_{it} + \xi_t + \rho_{it} \qquad [2]$$

$$PIQ_{it} = \gamma_i + \gamma_1 PIQ_{i,t-1} + \gamma_2 X_{it} + \gamma_3 Z_{it} + \phi_t + \varphi_{it} \qquad [3]$$

where in the two equations above, country-fixed effects are indicated by β_i and γ_i, and time specific effects by ξ_t and ϕ_t; while the error-terms by ρ_{it} and φ_{it}.

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[31] Similar discussion/details of the methodology section can be seen from Javed (2015).

Moreover, Eq[2] and Eq[3] have been transformed by taking the first differences, as indicated below:

$$\Delta EIQ_{it} = \alpha_1 \Delta EIQ_{i,t-1} + \alpha_2 \Delta X_{it} + \alpha_3 \Delta Z_{it} + \theta_t + \varepsilon_{it} \qquad [4]$$

$$\Delta PIQ_{it} = \Omega_1 \Delta PIQ_{i,t-1} + \Omega_2 \Delta X_{it} + \Omega_3 \Delta Z_{it} + \tau_t + \sigma_{it} \qquad [5]$$

where Δ stands for change between years t and t-1 for a variable. At the same time, one set of year indicators each is represented by θ_t and τ_t, respectively. Furthermore, ε_{it} and σ_{it} respectively, are the error terms. It may be noted here that through these transformed models, the possibility of heterogeneity (which is not fully captured by the regressors) is successfully dealt with by the effective elimination of country-fixed effects.

The transformed models above (that is Eq[4] and Eq[5]) have been estimated in the current study by Arellano and Bover (1995) approach. This approach has the advantage that it allows information in the equations to be simultaneously incorporated in both levels and difference forms.

At the same time, it is important to point out that inclusion of the lag dependent variable gives way to a statistical problem; by virtue of the lag dependent variable and the error term being automatically correlated with each other. Hence, the way out of this calls for including further lags of the dependent variable, which in turn act as instruments. Arellano and Bover (1995), and Blundell and Bond (1998) recommended for such model the GMM (Generalized Method of Moments) approach.[32] Under this, the model gets estimated through GMM in both levels and differences simultaneously; in turn further enhancing the efficiency of the model through the addition of even more instruments to the system. Furthermore, the current study employs standard errors that are completely robust towards serial correlation and arbitrary heteroskedasticity in GMM estimation. The above system has been estimated through the Stata software[33]; using the Stata command called 'xtabond2', which was developed by Roodman (2009).

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[32] The work was originally done by Arellano and Bond (1991). This was taken forward by Arellano and Bover (1995), while Blundell and Bond (1998) extended it further.
[33] http://www.stata.com/

2.4. Estimation and Results

Determinants of institutional quality have been estimated for both the economic institutional quality, and the political institutional quality. As indicated earlier, Economic Freedom Index and Polity II index have been used as proxies for these two, respectively. Also, while the main thrust of the estimation is on programme countries, focus has also been extended for prolonged users, as a special case. Tables 2.2 and 2.4 highlight the significant determinants of economic- and political institutional quality of the countries that have remained under IMF programme at one time or the other, during the sample period (that is, programme countries). Moreover, Tables 2.3 and 2.5 estimate the significant determinants of economic- and political institutional quality with regard to prolonged users.

To start with, it will be pertinent to indicate that the entire specifications pass the test of Hansen-J statistic, which is concerned with Over-Identifying Restrictions (OIR; Hansen, 1982); bringing in turn validity to the instruments at hand. Further support of the specification of the models is obtained from meeting both the F-test for the overall significance of the regression, and the Arellano-Bond tests for serial correlation. Moreover, the reported OIR test points out that all the instruments are exogenous[34].

The lag of both EIQ and PIQ remain positively significant for both programme countries and prolonged users, indicating high persistence in the evolution of institutional quality. This is in line with the path dependent nature of institutional evolution, where the past institutional setup feeds into the present; and forms an underlying reason for adopting the dynamic process in the current study.

The dummy variable, regime, indicates whether a country has parliamentary or a presidential form of government. The estimations indicate that regime is significantly positive throughout, which means that parliamentary form of government enhances both economic- and political institutional quality in programme countries, as well as prolonged users.

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[34] Roodman (2007) provides details.

Table 2.2. Dependent variable -economic freedom index- programme countries

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Lag EFI	0.824***	0.921***	0.818***	0.845***	0.773***	0.509***	0.875***	0.836***	0.747***	0.496***
	(0.0696)	(0.0499)	(0.0585)	(0.0578)	(0.0403)	(0.0595)	(0.0620)	(0.0343)	(0.0397)	(0.0389)
Regime	0.348***									0.164
	(0.0923)									(0.118)
Military	-0.0160									0.0122
	(0.111)									(0.166)
Herf. Index Opp.		-0.0248								0.111
		(0.108)								(0.157)
Herf. Index Gov.		0.123								0.0916
		(0.0970)								(0.120)
Agg. Govern. Ind.			0.00695***							0.0107***
			(0.00245)							(0.00343)
Civil Liberties				0.0749***						0.0467
				(0.0276)						(0.0304)
KOF Index of Glob.					0.0114***					0.00830
					(0.00317)					(0.00805)
Monetary Freedom						0.00275				-0.000998
						(0.00246)				(0.00179)
Fiscal Freedom						-0.00624				-0.000795
						(0.00414)				(0.00353)
Investment Freedom							0.00142			0.000396
							(0.00176)			(0.00112)
Property Rights								0.00680***		-0.00333
								(0.00192)		(0.00217)
Log Real GDP									0.145***	-0.166
									(0.0392)	(0.121)
Constant	0.982**	0.482	0.958***	0.630**	0.825***	3.277***	0.796**	0.865***	0.611***	3.552***
	(0.448)	(0.379)	(0.332)	(0.320)	(0.200)	(0.580)	(0.372)	(0.229)	(0.213)	(0.708)
Observations	738	654	719	792	791	719	719	719	787	547
Number of countries	89	84	96	96	95	94	94	94	96	82
Hansen OIR test	0.396	0.515	0.998	0.198	1.000	1.000	0.482	1.000	1.000	1.000
AR(1)	1.99e-08	5.46e-07	4.09e-08	5.51e-09	3.47e-09	6.09e-06	8.59e-08	2.44e-08	1.83e-09	1.42e-05
AR(2)	0.301	0.909	0.251	0.230	0.206	0.300	0.314	0.375	0.201	0.616
AR(3)	0.802	0.652	0.818	0.706	0.550	0.954	0.727	0.816	0.474	0.0679

Note: Models (indicated by columns) estimated by System-GMM approach; in the parenthesis are robust standard errors *** p<0.01, ** p<0.05, * p<0.1. Models taken separately to see impact of variables individually (along with avoiding collinearity issue among variables); last model includes all the variables and checks their impact taken together. The null hypothesis of instrument set being valid exogenous is checked by the p-values of the Hansen Over-Identifying Restrictions (OIR) test. Arellano-Bond AR(1), AR(2) and AR(3) tests are used to check the null of no autocorrelation. To save space, time dummies not reported. Furthermore, all available lagged values of endogenous variables are used as instruments.

The impact of the chief executive being a military personal is next estimated. It can been seen from the estimation that, military (in power) significantly and negatively impacts political institutional quality in the case of both programme countries and prolonged users. At the same time, in the case of economic institutional quality while the negative impact

becomes insignificant in the case of programme countries, the impact remains negative and significant for prolonged users.

Both the estimated Herfindahl Index Opposition and Herfindahl Index Government point out that excessive strength of either opposition or government in parliament remained inconsequential for improving institutional quality (in the case of programme countries and prolonged users).

The estimated aggregate governance indicator indicates that improvement in the governance level has a positive consequence for economic institutional quality, in the case of programme countries and prolonged users. The same is true for political institutional quality in the case of programme countries, while the positive bearing of aggregate governance indicator becomes insignificant in the case of prolonged users. This significantly positive impact on institutional quality, underlines the importance of state in providing the right kind of environment for the market to function properly (Toye, 1993), which includes reducing the underlying transaction costs involved in the economic activity (a result emphasized by NIE).

It is important to have civil liberties, as its estimated results for both programme countries and prolonged users hold a significantly positive bearing on institutional quality.

Level of openness, which is captured by the KOF index of globalization, comes out to be a key player in improving overall institutional quality, since it is significantly positive in the case of programme countries, as well as prolonged users.

Among other variables, monetary freedom and investment freedom are estimated to remain consequential for political institutional quality, since they have significantly positive bearing in the case of programme countries and prolonged users. The same positive impact becomes insignificant in the case of economic institutional quality. Moreover, estimated fiscal freedom does not significantly impact institutional quality.

Table 2.3. Dependent variable -economic freedom index- prolonged users

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Lag EFI	0.704***	0.721***	0.391***	0.666***	0.886***	0.564***	0.0228	0.0747	0.735***	0.500***
	(0.0672)	(0.0496)	(0.0809)	(0.0450)	(0.0297)	(0.0673)	(0.0828)	(0.0681)	(0.0520)	(0.0578)
Regime	0.149**									0.275
	(0.0633)									(0.230)
Military	-0.193**									-0.414**
	(0.0925)									(0.195)
Herf. Index Opp.		0.0487								0.177
		(0.110)								(0.126)
Herf. Index Gov.		0.219								0.162
		(0.136)								(0.159)
Agg. Govern. Ind.			0.0154***							0.0108**
			(0.00493)							(0.00443)
Civil Liberties				0.0904**						-0.0419
				(0.0402)						(0.0426)
KOF Index of Glob.					0.00363*					-0.00171
					(0.00214)					(0.00598)
Monetary Freedom						0.00131				-0.00167
						(0.00277)				(0.00313)
Fiscal Freedom						0.00465				0.00204
						(0.00531)				(0.00346)
Investment Freedom							0.000752			-0.000238
							(0.00238)			(0.00178)
Property Rights								0.00188		-0.00515
								(0.00393)		(0.00315)
Log Real GDP									0.130*	-0.0905
									(0.0712)	(0.180)
Constant	1.821***	1.631***	3.315***	1.828***	0.523***	2.221***	5.870***	5.973***	0.856**	3.665***
	(0.406)	(0.364)	(0.499)	(0.314)	(0.145)	(0.559)	(0.541)	(0.485)	(0.384)	(1.064)
Observations	297	283	272	301	301	293	293	293	298	251
Number of countries	36	36	37	37	37	37	37	37	37	36
Hansen OIR test	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AR(1)	0.000401	9.75e-05	0.000212	5.23e-05	6.17e-05	0.000112	0.544	0.205	2.64e-05	0.000265
AR(2)	0.0954	0.200	0.0177	0.0997	0.0910	0.0870	0.163	0.141	0.103	0.130
AR(3)	0.177	0.165	0.286	0.143	0.183	0.108	0.316	0.259	0.203	0.576

Note: Models (indicated by columns) estimated by System-GMM approach; in the parenthesis are robust standard errors *** p<0.01, ** p<0.05, * p<0.1. Models taken separately to see impact of variables individually (along with avoiding collinearity issue among variables); last model includes all the variables and checks their impact taken together. The null hypothesis of instrument set being valid exogenous is checked by the p-values of the Hansen Over-Identifying Restrictions (OIR) test. Arellano-Bond AR(1), AR(2) and AR(3) tests are used to check the null of no autocorrelation. To save space, time dummies not reported. Furthermore, all available lagged values of endogenous variables are used as instruments.

The importance of property rights is paramount in the literature of NIE. Acemoglu and Robinson (2012) for example, pointed out that the reason why countries like UK and the Netherlands developed far quicker than its other neighbours is because of the protection of property rights that led to greater research, and innovation. The current study estimates that property

Table 2.4. Dependent variable -Polity II- programme countries

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Lag Polity II	0.710***	0.865***	-0.00518	0.686***	0.674***	0.605***	0.566***	0.781***	0.921***	0.864***
	(0.0502)	(0.0431)	(0.0592)	(0.0315)	(0.0471)	(0.0579)	(0.0550)	(0.0338)	(0.0150)	(0.0437)
Regime	1.340***									0.0651
	(0.340)									(0.197)
Military	-0.522*									-0.152
	(0.285)									(0.173)
Herf. Index Opp.		0.748								0.00680
		(0.473)								(0.277)
Herf. Index Gov.		0.347								0.0472
		(0.528)								(0.327)
Agg. Govern. Ind.			0.0817**							-0.0135
			(0.0395)							(0.0105)
Civil Liberties				1.108***						0.530***
				(0.143)						(0.204)
KOF Index of Glob.					0.0724***					0.00736
					(0.0123)					(0.00859)
Monetary Freedom						0.0273**				0.00188
						(0.0116)				(0.00943)
Fiscal Freedom						-0.0172				-0.00219
						(0.0185)				(0.00876)
Investment Freedom							0.0621***			0.000173
							(0.0110)			(0.00602)
Property Rights								0.0246**		-0.00454
								(0.0115)		(0.00739)
Log Real GDP									0.0917	0.0552
									(0.0600)	(0.104)
Constant	-1.082***	0.716	-0.115	-4.577***	-3.628***	0.908	-1.127**	-0.0203	-0.961*	-1.465
	(0.317)	(0.743)	(1.415)	(0.560)	(0.571)	(1.764)	(0.507)	(0.445)	(0.498)	(1.023)
Observations	2,722	1,841	1,179	2,892	2,845	1,444	1,444	1,444	2,721	902
Number of cno	104	99	111	112	110	108	108	108	110	98
Hansen OIR test	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AR(1)	8.66e-11	8.02e-06	0.263	1.26e-10	0	1.22e-06	8.80e-06	1.40e-05	1.34e-10	0.0784
AR(2)	0.674	0.279	0.135	0.854	0.827	0.233	0.318	0.316	0.599	0.181
AR(3)	0.169	0.690	0.805	0.186	0.181	0.415	0.491	0.452	0.275	0.425

Note: Models (indicated by columns) estimated by System-GMM approach; in the parenthesis are robust standard errors *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Models taken separately to see impact of variables individually (along with avoiding collinearity issue among variables); last model includes all the variables and checks their impact taken together. The null hypothesis of instrument set being valid exogenous is checked by the p-values of the Hansen Over-Identifying Restrictions (OIR) test. Arellano-Bond AR(1), AR(2) and AR(3) tests are used to check the null of no autocorrelation. To save space, time dummies not reported. Furthermore, all available lagged values of endogenous variables are used as instruments.

rights have a significantly positive impact in the case of political institutional quality in the case programme countries and prolonged users. Furthermore, while the impact remains significantly positive for economic institutional quality in the case of programme countries, the positive impact becomes insignificant in the case of prolonged users (may be due to the absence of complementing institutional framework, like rule of law that

efficiently enforces property rights to the extent that they significantly enhance economic institutional quality).

Table 2.5. Dependent variable -Polity II- prolonged users

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Lag Polity II	0.634***	0.763***	0.674***	0.645***	0.577***	0.648***	0.388***	0.594***	0.907***	0.895***
	(0.0658)	(0.0501)	(0.138)	(0.0453)	(0.0626)	(0.0906)	(0.0808)	(0.0940)	(0.0163)	(0.0413)
Regime	0.938*									0.276
	(0.532)									(0.229)
Military	-1.000**									0.0619
	(0.444)									(0.272)
Herf. Index Opp.		-0.0950								-0.388
		(0.375)								(0.511)
Herf. Index Gov.		0.463								0.120
		(0.717)								(0.562)
Agg. Govern. Ind.			0.0159							-0.00721
			(0.0355)							(0.00938)
Civil Liberties				0.965***						0.312*
				(0.149)						(0.165)
KOF Index of Glob.					0.0913***					0.0169*
					(0.0231)					(0.00942)
Monetary Freedom						0.0228**				0.00392
						(0.0109)				(0.00869)
Fiscal Freedom						0.0523				0.00764
						(0.0343)				(0.00827)
Investment Freedom							0.0562***			-0.00405
							(0.0169)			(0.00594)
Property Rights								0.0415*		-0.00242
								(0.0226)		(0.00907)
Log Real GDP									0.248***	0.00336
									(0.0694)	(0.0964)
Constant	1.293**	0.0274	0.560	-4.771***	-3.211***	-4.601	-1.060	-0.883	-2.565***	-2.459*
	(0.515)	(0.812)	(1.209)	(0.720)	(1.050)	(3.262)	(1.104)	(1.266)	(0.739)	(1.334)
Observations	1,142	730	465	1,154	1,154	597	597	597	1,135	403
Number of countries	42	42	43	43	43	43	43	43	43	42
Hansen OIR test	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.920	1.000	1.000
AR(1)	1.03e-05	0.000795	0.112	2.38e-05	2.27e-05	0.00911	0.00265	0.0111	9.03e-06	0.122
AR(2)	0.589	0.414	0.686	0.409	0.472	0.300	0.333	0.233	0.727	0.134
AR(3)	0.314	0.315	0.578	0.520	0.388	0.354	0.387	0.351	0.417	0.859

Note: Models (indicated by columns) estimated by System-GMM approach; in the parenthesis are robust standard errors *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Models taken separately to see impact of variables individually (along with avoiding collinearity issue among variables); last model includes all the variables and checks their impact taken together. The null hypothesis of instrument set being valid exogenous is checked by the p-values of the Hansen Over-Identifying Restrictions (OIR) test. Arellano-Bond AR(1), AR(2) and AR(3) tests are used to check the null of no autocorrelation. To save space, time dummies not reported. Furthermore, all available lagged values of endogenous variables are used as instruments.

Economic institutional quality, in the case of programme countries and prolonged users, is impacted positively and significantly by real economic growth. At the same time, impact on political institutional quality becomes

insignificant in the case of programme countries. Having said that, the estimated impact of real economic growth on political institutional quality comes out to be significant and positive in the case of prolonged users.

It may be noted here, that all variables discussed above are estimated in one model (model/column[10]). It can be seen here that many of the variables lose their significance when taken together. Having said that, aggregate governance indicator, civil liberties, and KOF index of globalization remain positive and significant in terms of their impact for overall institutional quality; while military in power significantly reduces it. It may be that other determinants, although are significant individually, but in the absence of strong overall institutional quality of supporting institutional setup, they lose their significance when taken together. Hence, it is important that impact of institutional determinants is made stronger through enhanced focus on them and their supporting institutional environment.

2.4.1. Robustness check

The robustness check is to compare the programme countries results (Tables 2.2 and 2.4) with the overall member countries (Tables A2.1 and A2.2), respectively for both the economic- and political institutional quality. Most of the results are the same in both the programme- and overall member countries for the economic- and political institutional quality models, respectively. This shows that our results are robust for all countries.

2.5. Conclusion

The current study is an attempt to determine the variables that significantly impact both the economic- and political institutional quality in the IMF programme countries. While the results brought forth in the concluding remarks pertain to programme countries, the current study also looks at the special case of prolonged users. The panel data for the above groups of countries has been analysed for the period 1980-2009, which coincides with a time of active involvement of IMF with its member countries, in terms of both technical and financial support. Furthermore, the analysis has been carried out using a System-GMM approach.

The results show that the dynamic process is highly persistent for both economic- and political institutional quality, highlighting the aspect of path dependent nature of evolution of institutional quality. As per estimations, a parliamentary form of government, aggregate governance indicator, civil liberties, level of openness, and property rights are conducive for enhancing overall institutional quality. Moreover, greater monetary- and investment freedom contribute positively to political institutional quality; while economic growth holds a positive consequence for economic institutional quality. On the other hand, military in power impacts negatively on political institutional quality.

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Table A2.1. Dependent variable -economic freedom index- all member countries

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Lag EFI	0.677***	0.965***	0.626***	0.806***	0.779***	0.850***	0.847***	0.820***	0.763***	0.525***
	(0.0434)	(0.0320)	(0.0577)	(0.0470)	(0.0361)	(0.0339)	(0.0347)	(0.0262)	(0.0390)	(0.0332)
Regime	0.380***									0.166
	(0.0885)									(0.123)
Military	-0.0930									0.0337
	(0.146)									(0.150)
Herf. Index Opp.		-0.00228								0.122
		(0.0283)								(0.114)
Herf. Index Gov.		0.0311								0.121
		(0.0271)								(0.0869)
Agg. Govern. Ind.			0.0109**							0.00802**
			(0.00533)							(0.00318)
Civil Liberties				0.0758***						0.0475*
				(0.0195)						(0.0258)
KOF Index of Glob.					0.00585***					0.0162**
					(0.00226)					(0.00657)
Monetary Freedom						0.00413				-0.000757
						(0.00299)				(0.00153)
Fiscal Freedom						0.00138				-0.000313
						(0.00222)				(0.00284)
Investment Freedom							0.00125			-0.00123
							(0.00152)			(0.00102)
Property Rights								0.00552***		-0.00132
								(0.00113)		(0.00188)
Log Real GDP									0.0562**	-0.176
									(0.0236)	(0.123)
Constant	2.055***	0.141	2.018***	0.959***	1.168***	0.621**	0.988***	0.984***	1.158***	3.041***
	(0.275)	(0.222)	(0.418)	(0.278)	(0.180)	(0.245)	(0.198)	(0.159)	(0.206)	(0.654)
Observations	1,071	933	1,051	1,164	1,146	1,056	1,056	1,056	1,150	796
Number of countries	126	117	139	139	135	135	135	135	138	115
Hansen OIR test	0.119	0.326	0.317	0.0985	1	1	0.980	0.999	1	1
AR(1)	8.66e-09	1.87e-08	2.24e-08	7.26e-10	1.06e-10	7.84e-10	3.21e-09	1.17e-10	9.84e-10	1.46e-07
AR(2)	0.0902	0.590	0.0921	0.0677	0.0645	0.0926	0.100	0.125	0.0561	0.801
AR(3)	0.349	0.579	0.590	0.252	0.202	0.220	0.261	0.330	0.121	0.760

Note: Models (indicated by columns) estimated by System-GMM approach; in the parenthesis are robust standard errors *** p<0.01, ** p<0.05, * p<0.1. Models taken separately to see impact of variables individually (along with avoiding collinearity issue among variables); last model includes all the variables and checks their impact taken together. The null hypothesis of instrument set being valid exogenous is checked by the p-values of the Hansen Over-Identifying Restrictions (OIR) test. Arellano-Bond AR(1), AR(2) and AR(3) tests are used to check the null of no autocorrelation. To save space, time dummies not reported. Furthermore, all available lagged values of endogenous variables are used as instruments.

Table A2.2. Dependent variable -Polity II- all member countries

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Lag Polity II	0.785***	0.828***	0.0459	0.714***	0.746***	0.690***	0.603***	0.798***	0.938***	0.723***
	(0.0428)	(0.0423)	(0.0558)	(0.0292)	(0.0463)	(0.0558)	(0.0536)	(0.0396)	(0.0123)	(0.0756)
Regime	1.449***									0.464
	(0.357)									(0.594)
Military	-0.254									-0.0862
	(0.240)									(0.688)
Herf. Index Opp.		0.169								-0.189
		(0.209)								(0.350)
Herf. Index Gov.		-0.501								-0.710
		(0.307)								(0.465)
Agg. Govern. Ind.			0.0434							0.0142
			(0.0295)							(0.0140)
Civil Liberties				1.093***						0.684***
				(0.138)						(0.259)
KOF Index of Glob.					0.0508***					-0.00653
					(0.0105)					(0.0186)
Monetary Freedom						0.0256**				0.00114
						(0.0103)				(0.00869)
Fiscal Freedom						-0.0251				-0.00117
						(0.0165)				(0.0116)
Investment Freedom							0.0661***			-0.00736
							(0.0106)			(0.00527)
Property Rights								0.0104		0.00452
								(0.00924)		(0.00674)
Log Real GDP									0.0447	-0.139
									(0.0439)	(0.168)
Constant	-0.674***	1.271***	0.973	-3.907***	-1.992***	1.225	-2.301***	1.358**	-0.443	-0.394
	(0.233)	(0.452)	(1.309)	(0.569)	(0.466)	(1.333)	(0.518)	(0.586)	(0.334)	(1.719)
Observations	3,977	2,730	1,677	4,154	4,107	2,066	2,066	2,069	3,886	1,259
Number of countries	149	134	157	158	156	154	154	154	155	133
Hansen OIR test	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AR(1)	0	8.68e-06	0.116	0	0	5.34e-07	3.02e-06	1.33e-05	0	0.0412
AR(2)	0.905	0.205	0.128	0.754	0.718	0.209	0.279	0.261	0.400	0.0526
AR(3)	0.303	0.925	0.200	0.333	0.319	0.455	0.536	0.482	0.532	0.343

Note: Models (indicated by columns) estimated by System-GMM approach; in the parenthesis are robust standard errors *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Models taken separately to see impact of variables individually (along with avoiding collinearity issue among variables); last model includes all the variables and checks their impact taken together. The null hypothesis of instrument set being valid exogenous is checked by the p-values of the Hansen Over-Identifying Restrictions (OIR) test. Arellano-Bond AR(1), AR(2) and AR(3) tests are used to check the null of no autocorrelation. To save space, time dummies not reported. Furthermore, all available lagged values of endogenous variables are used as instruments.

Chapter 3

Institutional quality, macroeconomic stabilization and economic growth: a case study of IMF programme countries

3.1. Introduction[35]

During the last three decades or so, many countries have received once or have been prolonged users[36] of International Monetary Fund (IMF; or simply the 'Fund') resources, but research literature points to the fact that most of them have not been able to achieve macroeconomic stability on a sustained basis (Evrensel, 2002; Easterly, 2005).

Article IV, Section 1 of IMF's Article of Agreement[37], identifies one of the essential roles of IMF as a facilitator of member countries in reaching the objective of sustained economic growth. Notwithstanding the criticism of IMF programmes in terms of their neo-classical/monetarist basis, Enhanced Structural Adjustment Facility (ESAF; established in 1987)[38] of the Fund for low-income countries, practically underlined the shifting focus of IMF from the surveillance and BOP to both the BOP and growth objective. But, a programme basis well entrenched in orthodox economic thought, meant lack of any attempt by IMF to adopt more heterodox though process, for example in the shape of NIE, appears to have been a major cause for the

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[35] There are two earlier versions of this paper. One can be found at 'Munich Personal RePEc Archive'(http://mpra.ub.uni-muenchen.de/). It was place there on 6th June, 2014 (https://mpra.ub.uni-muenchen.de/secure/cgi/users/home?screen=EPrint%3A%3AView&eprintid=56370); while the other has been placed as a UB Economics (Faculty of Economics and Business, University of Barcelona) working paper (http://www.ub.edu/ubeconomics/wp-content/uploads/2013/07/Paper-2_Omer-Javed.pdf).

[36] Independent Evaluation Office (IEO, 2002, p. 9 and 24) indicates that a country which remains in an IMF programme for at least 7 years in a decade, is referred to as a prolonged user.

[37] http://www.imf.org/external/pubs/ft/aa/pdf/aa.pdf

[38] ESAF was later in 1999 renamed as, 'Poverty Reduction and Growth Facility' (http://www.imf.org/external/np/exr/chron/chron.asp).

non-performance of IMF programmes in terms of economic growth consequences for programme countries (especially the prolonged users). Hence, it has been pointed out that too much focus of the IMF on the demand side of the economy, at the cost of supply side, has led to the impact of IMF programmes at most being neutral (and in some countries even negative) on economic growth of programme countries (Haque and Khan, 1998; Bird, 2001; Bird, 2007; Arpac *et al.*, 2008).

NIE (New Institutional Economics) literature, on the other hand, indicates that countries which saw improvement in institutional quality, also witnessed their income per capita improving (Acemoglu and Johnson, 2005; Afonso and Jalles, 2011). Actually, NIE points out that by focusing on improving determinants of institutional quality (for example, by reducing transaction costs, by protecting property rights, by ensuring enforcement of contracts, and by improving rule of law, etc.) the overall institutional environment improves, and has a positive impact on both the macroeconomic situation and economic growth.

Given the consequence of IMF programmes at most being neutral for economic growth, on one hand, and institutional determinants significantly and positively affecting economic growth in countries overall, on the other hand, the paper intends to explore the possibility that significant institutional determinants (obtained from chapter 2) positively impact real GDP both directly, and then indirectly through the macroeconomic stability channel, in IMF programme countries.

The study is structured in the following way: relevant literature is reviewed in Section 3.2, followed by discussion of data and methodology in Section 3.3, while Section 3.4 highlights estimation and results. Conclusion of the study is given in the last section (which is Section 3.5).

3.2. Literature Review

Ever since the Third World Debt crisis of the 1980s, IMF enhanced its role, mainly through its structural adjustment window; resulting in turn, in greater focus of economic research to gauge the impact of IMF programmes on the economic performance of recipient countries.

A lot of countries have been under the IMF programmes during the last three decades. Therefore, there has been an effort by researchers to understand the impact of these programmes, for which different approaches have been employed. Haque and Khan (1998; p. 7) pointed out that the difference between these methodologies fundamentally lay in the way the 'counterfactual' was formulated, which served as a benchmark to gauge the performance of the 'actual outcome' against a macroeconomic outcome existing in a world of no programme (i.e., the 'counterfactual').

Haque and Khan (1998; p. 8-12) indicated that due to informational constraints with regard to structural parameters and policy reaction function parameters, different programme evaluation methods construct counterfactuals differently; with approaches being (i) before-after (BA; evaluates macroeconomic performance under and before the programme; but suffers from over-simplification by excluding the impact of any exogenous factors), (ii) with-without (WW; where a group of non-programme countries is taken as a 'control group' and the performance of a programme country is compared with it; with major shortcoming in terms of assuming that programme and non-programme countries are same prior to the start of the programme, which is especially problematic given the programme country is crisis hit to start with, suffering in turn the non-random selection bias with regard to selection of programme countries), (iii) generalized evaluation estimator (GEE) approach (while it also compares programme and non-programme countries, it controls for initial conditions and exogenous influences), and (iv) comparison of simulations (SIM; compares simulated performance of countries under hypothetical Fund programmes and non-Fund policies; but has the shortcoming that the required underlying econometric model that captured the whole spectrum of a typical Fund programme, is not available).

Using BA approach, while Khan and Knight (1981) reported a negative impact, Killick *et al.* (1992) pointed towards a positive impact of IMF programmes on economic growth of recipient countries; where Evrensel (2002) indicated a neutral impact on economic growth. Similarly using WW approach, while Donovan (1981) found out a positive impact of Fund programmes on economic growth, Loxley (1984) pointed towards a neutral effect on growth. Hence, the underlying weak assumptions with regard to

formulation of counterfactual in the BA and WW approaches may be the reason why different studies using these methodologies produced results that are all over the place, making it difficult to conclude anything substantively with regard to the impact of IMF programmes on economic growth of recipient countries.

Having said that, formulation of a more informed counterfactual, using GEE methodology gave more consistent results, which more often than not indicated that Fund programmes had a negative impact on economic growth of recipient countries. Hence, for example, Goldstein and Montiel (1986) using data from 1974-1981, and employing GEE methodology pointed out a negative impact of Fund programmes on economic growth. Similarly, Barro and Lee (2005) using GEE methodology (and by employing data from 1975 to 2000) indicated that Fund lending retarded economic growth. Also, Dreher (2006), who covered a time period from 1970-2000, pointed out an overall negative impact on economic growth. Furthermore, Nsouli *et al.* (2004) also indicated that Fund programmes remained neutral in terms of their impact on economic growth.

A further review of literature to see the detailed impact of IMF programmes revealed a poor performance in terms of individual macroeconomic indicators of recipient countries, along with highlighting the emergence and persistence of recidivism in IMF programme countries. While Khan (1990) and Pastor (1987) discovered significant positive impacts on the overall balance of payments, Conway (2006) indicated that the impact had reduced since the 1970s and 1980s. Evrensel (2002; p. 586) found out that previous programme countries entered a new one at the back of an even worse macroeconomic situation (as compared to the situation when they were not in the programme in the first place), because of the existence of moral hazard in terms of easily available financing. Also, he indicated that significant improvement achieved in terms of current account and foreign exchange reserves, could not be sustained after the programme ended. Similarly, Przeworski and Vreeland (2000), using data from 1951 to 1990, showed that countries in a programme saw their growth rates decreasing; whereas the same countries otherwise grew faster once they left the programme.

Moreover, research conducted by Barro and Lee (2005) did not see any significant consequence of IMF programmes for either investment or inflation; and could not find positive consequence on economic growth in recipient countries, which remained frequent borrowers from IMF. Bird (1996) pointed out that till the time Fund programmes put improving economic growth as the top priority on its agenda, recipient countries would continue to remain recidivist. Similar consequence was highlighted by Hutchison and Noy (2003) while gauging the impact of Fund programmes in Latin American, pointed out low programme completion rates and recidivism, high output costs, and no improvement in current account.

Butkiewicz and Yanikkaya (2005) using actual monetary values of IMF lending (rather than the number of programmes approved by the Fund, since according to the them there remained a high level of non-completion of IMF programmes) pointed out that while Fund's overall objective for crisis-hit countries was to put them on stable economic growth footings, yet the impact of Fund programmes in this regard, was either neutral or negative, given their policies had an adverse impact for public and private investment; revealing in turn that the Fund in putting too much emphasis on the demand side, neglected the supply side of the economy in the process. One of the main steps in this regard according to NIE, is improving institutions so that the transaction costs can be lowered to induce investment (which in turn helps boost economic growth).

With regard to the prolonged users, Easterly (2005) indicated that during 1980-1999 these countries were unable to achieve either reasonable growth or deal convincingly with macroeconomic distortions.

Given this background, while the Fund also realized and internalized this performance and criticism (IMF 2005a; IEO, 2007), researchers have criticized and asked IMF to improve its Financial Programming Framework (FPP) for better results for recipient countries in terms of consequences for macroeconomic stability and economic growth (IEO, 2007; Bird and Willett, 2004). For instance, Bird (2007) found the criticism to be legitimate since it found IMF programmes to be 'over simplistic'. Moreover, Buira (1983) called on the Fund to revisit its financial programming techniques for certain cases. Also, Bird (2001) asked IMF to redesign its programmes.

More specifically, Abbot *et al.* (2010) while analyzing impact of programmes on developing countries, criticized Fund to be too rigid and conventional/uniform in its approach in terms of its conditionalities[39], and this formed as one of the reasons for its impact neutral performance with regard to economic growth; in turn asked for a fresh approach.

In terms of suggesting specific remedies, Khan and Knight (1985), for instance, indicated the negative impact on economic growth could be restricted to short-term in case supply-side policies were pursued. Moreover, Arpac *et al.* (2008) suggested to IMF to focus on domestic politics also, while forming expectations about the extent of programme implementation in a country. At the same time, Nsouli *et al.* (2004) pointed out that most research on gauging impact of Fund programmes did not take into account the underlying role of institutional quality in programme success rate. Furthermore, pointed out that in programme countries, better institutional quality and conducive political environment had positive consequences for macroeconomic outcomes, and programme implementation rates.

Research literature of NIE has found that improvement in institutional determinants had an overall positive and significant bearing on the economic growth of countries (for example, Rodrik *et al.*, 2002; Hall and Jones, 1999). For instance, Acemoglu *et al.* (2004) while analyzing the different institutions of North and South Korea, pointed out that unlike the North, in the South, political and economic institutions were strengthened for example by policy decisions that were taken democratically, and which protected private property, and developed markets. This led to greater economic growth and development in South Korea over the years, as compared to North Korea, even though both countries shared the same culture since they were one country under the Japanese occupation (which ended in 1945, and the division subsequently). Similarly, improvement in institutions (both political and economic) led Botswana experience very

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[39] The process of conditionality is whereby installments are released on a quarterly basis, at the back of successfully meeting benchmarks, which are pre-decided with regard to performance (Barro and Lee, 2005, p.1248).

42

high growth rates during the last three decades or so (Acemoglu *et al.*, 2003a; Parsons and Robinson, 2006).

3.3. Data and Methodology

3.3.1. Theoretical design

The main motivation of the current study is based on the 'missing link', which identifies itself as the effect of institutions on economic growth of IMF programme countries; given the background of a poor performance of IMF programmes for recipient countries in terms of economic growth consequence (mainly due to insufficient focus on the supply side of the economy) and the importance of institutions in improving growth rates in countries, as revealed by the research literature of NIE. Hence, the current study makes an effort to explore this 'missing link' by analysing the impact of institutional determinants on economic growth of IMF programme countries, with the underlying premise that improvement in institutional determinants both directly, and indirectly (through the channel of macroeconomic stability) positively impact real GDP.

As indicated earlier, NIE literature indicates that enhancement in the quality of institutions has a significantly positive bearing on real economic growth (Rodrik *et al.*, 2002; Ugur, 2010). In the current analysis, the same is being premised for IMF programme countries:

Real GDP = f (institutional determinants, other variables)   [a]
                                (+)

At the same time, it has been advocated, for example by Acemoglu *et al.* (2003b) that the main reason behind macroeconomic instability (MI) and the varying levels of macroeconomic volatility among different countries were related more with institutional reasons than the traditionally identified macroeconomic determinants. Similarly, better budgetary institutions (which are important economic institutions) had a negatively significant impact on (budget) deficit (von Hagen, 1991). Hence, the current study

considers the notion that improvement in institutional determinants in IMF programme countries negatively impact macroeconomic instability:

MI = f (institutional determinants, other variables)   [b]
                    (-)

In a case study of Iran conducted by Haghighi *et al.* (2012) it was pointed out that there existed a long-term relation between economic growth and macroeconomic instability. Therefore, lastly, it is also premised here that macroeconomic instability has a negative bearing on real GDP in IMF programme countries:

Real GDP = f (macroeconomic instability, other variables)   [c]
                    (-)

For the purpose of analysis, the institutional determinants to be employed will be the significant determinants of institutional quality taken from chapter 2.

3.3.2. Sample

Out of the total IMF member countries at 188, countries that have remained under the IMF programme at one time or the other (otherwise called 'programme countries') have been found out to stand at 129 during the sample period (1980-2009). Furthermore, for the purposes of analysis, programme countries have been sub-divided into two groups of 'prolonged users' and 'non-prolonged users[40]'. They stand at 44 and 85, respectively, during the same time period. At the same time, for the purpose of drawing lessons from countries that have never been under an IMF programme during the time period taken, non-programme countries have also been taken; which stand at 59[41].

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[40] The author has used the terminology of non-prolonged users to represent a group of programme countries that have remained under an IMF programme for less than 7 years in a decade.
[41] See Table A.3.4 for group-wise list of IMF member countries during 1980-2009.

3.3.3. Data and variable description

Data on real GDP is taken from the World Economic Outlook (WEO) of the IMF[42].

Based on the methodology and definitions of Ismihan (2003), Macroeconomic Instability Index (MII)[43] has been constructed using the following five[44] indicators:

(i) Inflation rate (calculated by taking data on average consumer prices from WEO),

(ii) budget deficit as percentage of GDP (taken from WEO),

(iii) general government gross debt as percentage of GDP (obtained from WEO),

(iv) exchange rate variability has been calculated on the basis of 12 month end-of-period nominal exchange rate in SDR, taken from International Finance Statistics (IFS; IMF)[45] and,

(v) Real Effective Exchange Rate Index (REER; taken from WDI[46] of the World Bank). This indicator has been included in Ismihan (2003) to augment MII to include the impact of competitiveness in it. Furthermore, it needs to be indicated that there exists another index in this regard called the Macroeconomic Stability Subindex[47], produced by World Economic Forum. The reason it has not been employed in the current analysis is because of lack of consistency of its methodology; in turn, inhibiting comparability of data over longer periods of time.

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[42] http://www.imf.org/external/pubs/ft/weo/2011/01/weodata/download.aspx
[43] For details, see Ismihan (2003; pp. 214-15), who constructed MII.
[44] It may be indicated here that while Ismihan (2003) only included the first four indicators to construct the MII, the current study augments it with one more indicator.
[45] Data taken from IFS CD ROM (IMF).
[46] http://data.worldbank.org/data-catalog/world-development-indicator
[47] http://www.weforum.org/pdf/Global_Competitiveness_Reports/Reports/GCR_05_06/Composition_of_the_Growth_Competitiveness_Index

Political/governance indicators. From chapter 2, significant variables include regime (is a dummy variable indicating 0 for presidential, and 1 for parliamentary form of government), military (chief executive a military officer or not; existence of it is represented by 1, 0 otherwise), civil liberties (data on civil liberties is taken from Freedom in the World (publication of Freedom House)[48]; where, the least rating of degree of freedom is indicated by 1, while the highest rating is represented by 7), and aggregate governance indicator (a simple average of the five indicators taken from Worldwide Governance Indicators (WGI; World Bank)[49], produced by Kaufmann, Kraay, and Mastruzzi (KKM, 2010)[50]; where these five indicators cover aspects with regard to the level of voice and accountability, effectiveness of government, the situation of rule of law, the quality of regulations, and the extent of control of corruption).

Economic variables. From chapter 2 significant variables include KOF Index of Globalization[51] (a proxy of openness), three measures of economic freedom and prosperity and are monetary freedom, investment freedom, and property rights (taken from the Index of Economic Freedom[52]). The other significant determinant of institutional quality from chapter 2 is real GDP, which has not been included here, since the dependent variable is also real GDP.

Control variables. They include government spending and population taken from WDI.

Endogeneity. Based on literature review (for instance discussion of institutions in NIE literature; see for example Acemoglu *et al.*, 2001), it has been realized that the problem of endogeneity exists for many variables. In the current study, variables that may be affected by endogeneity issue include MII, government spending, aggregate governance indicator, KOF Index of Globalization, monetary freedom, investment freedom, and property rights. It may be indicated here that as lagged dependent variable

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[48] http://www.freedomhouse.org/report-types/freedom-world
[49] http://data.worldbank.org/data-catalog/worldwide-governance-indicators
[50] http://info.worldbank.org/governance/wgi/index.aspx#home
[51] http://globalization.kof.ethz.ch/
[52] http://www.heritage.org/index/explore

is correlated with the error term, so lagged real GDP and lagged MII may cause endogeneity problem in the regression.

3.3.4. Econometric methodology

As explained in the theoretical design, the purpose here is to estimate the impact of institutional determinants (obtained from chapter 2) both directly and then indirectly (through MII) on real GDP, in terms of the two sub-groups of programme countries, i.e. 'prolonged users' and 'non-prolonged users'. Therefore, in line with the design, the first equation will be estimated as follows:

$$LGDP_{it} = \alpha_i + \alpha_1 LGDP_{i,t-1} + \alpha_2 X_{it} + \alpha_3 Z_{it} + \alpha_4 M_{it} + \omega_t + \epsilon_{it} \qquad [1]$$

where, $LGDP_{it}$ stands for log real GDP. α_i are the country-fixed effects. $LGDP_{i,t-1}$ stands for lagged log real GDP. X_{it} is a vector of significant political/governance indicators, and Z_{it} is a vector of significant economic variables from chapter 2; while M_{it} is a vector of control variables. ω_t are the time specific effects. ϵ_{it} is the error term.

While Eq[1] is estimated to check the direct impact of significant determinants of institutional quality on real GDP, the next two equations will together indirectly estimate this impact, as follows:

$$MII_{it} = \beta_i + \beta_1 MII_{i,t-1} + \beta_2 X_{it} + \beta_3 Z_{it} + \gamma_t + \eta_{it} \qquad [2]$$

where, MII stands for Macroeconomic Instability Index, while $MII_{i,t-1}$ stands for lagged MII. β_i are the country-fixed effects, while X_{it}, Z_{it}, once again are a vector of significantly positive determinants of institutional quality from chapter 2; γ_t are the time specific effects, and η_{it} is the error term.

and,

$$LGDP_{it} = \pi_i + \pi_1 LGDP_{i,t-1} + \pi_2 \widehat{MII}_{it} + \pi_3 M_{it} + \phi_t + \varphi_{it} \qquad [3]$$

where, $LGDP_{it}$ stands for log real GDP. π_i are the country-fixed effects. $LGDP_{i,t-1}$ stands for lagged log real GDP. $\widehat{MII}_{it}$ stands for predicted values of MII from Eq [2]. M_{it} are the control variables. ϕ_t are the time specific effects, while φ_{it} is the error term.

Hence, in Eq [2], the impact of significant determinants of institutional quality is investigated on MII, while in Eq [3] the impact of predicted MII is explored on real GDP.

The underlying premise for employing this indirect approach is to see the importance of institutional focus for IMF programmes in improving macroeconomic stability, and also, economic growth. The basis for this here is that as institutional quality improves, it will reduce macroeconomic instability, and also as macroeconomic instability decreases it will enhance real GDP.

The above equations (Eq[1] to Eq[3]) are being estimated using Arellano and Bover (1995) approach. The big advantage of this approach is that it uses the information in the equations simultaneously in level and as well as difference forms. For this purpose, we take the difference of all equations, as follows:

$$\Delta LGDP_{it} = \delta_1 \Delta LGDP_{i,t-1} + \delta_2 \Delta X_{it} + \delta_3 \Delta Z_{it} + \delta_4 \Delta M_{it} + \theta_t + \varepsilon_{it} \qquad [4]$$

$$\Delta MII_{it} = \rho_1 \Delta MII_{i,t-1} + \rho_2 \Delta X_{it} + \rho_3 \Delta Z_{it} + \tau_t + \sigma_{it} \qquad [5]$$

$$\Delta LGDP_{it} = \xi_1 \Delta LGDP_{i,t-1} + \xi_2 \Delta \widehat{MII}_{it} + \xi_3 \Delta M_{it} + \Omega_t + \mu_{it} \qquad [6]$$

These equations also serve the purpose of removing any possible heterogeneity in the models above (where Δ indicates change for a variable between years t and t-1).

For the estimation of the models, like the ones above, the approach of Generalized Method of Moments (GMM) has been recommended by

Arellano and Bover (1995) and Blundell and Bond (1998)[53]. The GMM approach, in the estimation of these types of models, enhances efficiency through addition of more instruments to the system of equations, i.e. in level and difference. Furthermore, all available lagged values of endogenous variables are used as instruments to resolve the problem of autocorrelation. All the above models are estimated using robust standard errors to address the problem of autocorrelation and heteroskedasticity.

3.4. Estimation and Results

All the models have been estimated separately on the two sub-groups of programme countries, being 'prolonged users' and 'non-prolonged users'. The reason behind taking these two groups is based on the inherent difference in economic environment of these two sub-groups, where the prolonged users are generally composed of very underdeveloped economies (and hence the need for entering frequent IMF programmes), while the non-prolonged users are more representative of economies that are overall more developed than the prolonged users. Moreover, estimations have also been made for the purpose of understanding the importance of significant determinants of institutional quality in programme countries, in the case of non-programme countries (that never entered an IMF programme during 1980-2009).

Tables 3.1(a) and 3.1(b) highlight the impact of institutional determinants on real GDP for prolonged and non-prolonged users, respectively. On the other hand, Tables 3.2(a) and 3.2(b), estimate the impact of institutional determinants on MII (once again for both prolonged and non-prolonged users). Thereafter, Tables 3.3(a) and 3.3(b), estimate the impact of predicted MII ($\widehat{MII}$) on real GDP (in terms of the two sub-groups of programme countries). At the same time, as an extension, Tables A3.1, A3.2, and A3.3 indicate estimations for the case of non-programme countries.

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[53] Like in the previous chapter, the 'xtabond2' command has been employed to estimate the above system.

Upfront it may be pertinent to indicate that instruments were valid and exogenous[54], since they passed the Hansen-J statistic test of Over-Identifying Restrictions (OIR; Hansen, 1982).

In Tables 3.1(a) and 3.1(b), lagged real GDP is positive and significant for real GDP in the case of both prolonged users and non-prolonged users; hence, highlighting the presence of dynamic process. The same consequence can be observed in the case of non-programme countries (Table A3.1). At the same time, in both the sub-groups of program countries, population in many of the models has a significantly negative bearing on real GDP, while government spending overall has a positive consequence for real GDP. The two control variables remain insignificant for real GDP, in the case of non-programme countries.

It can be seen in Tables 3.1(a) and 3.1(b) through the estimated institutional determinant 'regime', that as compared to presidential form of democracy, parliamentary form of democracy is more conducive for enhancing real GDP. The same consequence holds for the non-programme countries (Table A3.1). At the same time, a military officer as chief executive is detrimental to improvement in real GDP (i.e. has a significantly negatively impact) for the two sub-groups of the programme countries; while the negative impact remains insignificant in the case of non-programme countries. Moreover, civil liberties positively and significantly contribute in enhancing real GDP in the case of non-prolonged users (and the non-programme countries), while the positive impact remains insignificant in the case of prolonged users.

Aggregate governance indicator comes out to be highly important in enhancing real economic growth, since it holds significantly positive consequence for real GDP, for both the prolonged and non-prolonged users (and also in the case of non-programme countries).

The importance of openness of the economy is reflected in KOF index of globalization having a significantly positive impact on real GDP, for both

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[54] Roodman (2007) provides details.

50

the programme and non-programme countries. Also, monetary freedom significantly enhances real GDP for both the sub-groups (while the impact remains positive but insignificant in the case of non-programme countries). At the same time while investment freedom holds a positive (though insignificant) consequence for real GDP in the case of non-prolonged users (and also the non-programme countries), it holds a significantly positive bearing on real GDP in the case of prolonged users.

Table 3.1(a). Dependent variable -real GDP- prolonged users

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lag Log Real GDP	0.973***	0.804***	0.877***	0.510***	0.351***	1.005***	0.342***	0.942***
	(0.00946)	(0.0347)	(0.0226)	(0.0768)	(0.0600)	(0.00434)	(0.0660)	(0.0326)
Log Population	0.000873	0.0194	-0.0979**	-0.190***	-0.187***	-0.00555**	-0.199***	0.00841
	(0.00381)	(0.0256)	(0.0464)	(0.0561)	(0.0592)	(0.00232)	(0.0605)	(0.00799)
Government Spending	-0.000118	-0.000120	0.000156	3.86e-05	0.000354**	0.000375*	0.000363**	-4.76e-05
	(0.000190)	(0.000286)	(0.000237)	(0.000366)	(0.000148)	(0.000219)	(0.000150)	(0.000245)
Regime	0.0348**							0.0770**
	(0.0152)							(0.0380)
Military	-0.0280**							-0.0641**
	(0.0120)							(0.0256)
Agg. Gov. Ind.		0.00133***						-1.52e-05
		(0.000465)						(0.000779)
Civil Liberties			0.00694					0.000355
			(0.00544)					(0.00741)
KOF Index of Glob.				0.00438**				0.000506
				(0.00195)				(0.00135)
Monetary Freedom					0.000349**			-0.000302
					(0.000166)			(0.000365)
Investment Freedom						0.000578**		4.72e-05
						(0.000258)		(0.000288)
Property Rights							0.000176	-0.00129
							(0.000263)	(0.000817)
Constant	0.201***	0.977**	2.420***	6.320***	7.580***	-0.0112	7.563***	0.351**
	(0.0755)	(0.487)	(0.888)	(1.131)	(1.240)	(0.0423)	(1.254)	(0.156)
Observations	590	449	596	596	596	596	596	445
Number of countries	42	44	44	44	44	44	44	42
Hansen OIR test	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AR(1)	0.000819	0.114	0.000556	0.0208	0.375	0.000716	0.366	0.0753
AR(2)	0.137	0.104	0.137	0.781	0.603	0.211	0.345	0.0862
AR(3)	0.208	0.0892	0.402	0.597	0.122	0.283	0.0327	0.412

Note: Models (indicated by columns) estimated by System-GMM approach; in the parenthesis are robust standard errors *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Models taken separately to see impact of variables individually (along with avoiding collinearity issue among variables); last model includes all the variables and checks their impact taken together. The null hypothesis of instrument set being valid exogenous is checked by the p-values of the Hansen Over-Identifying Restrictions (OIR) test. Arellano-Bond AR(1), AR(2) and AR(3) tests are used to check the null of no autocorrelation. To save space, time dummies not reported. Furthermore, all available lagged values of endogenous variables are used as instruments.

Table 3.1(b). Dependent variable -real GDP- non-prolonged users

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lag Log Real GDP	0.819***	0.817***	0.965***	0.892***	0.869***	0.727***	0.732***	0.856***
	(0.0740)	(0.0383)	(0.0208)	(0.0338)	(0.0446)	(0.0822)	(0.0817)	(0.0432)
Log Population	-0.0454*	-0.0291**	-0.00356	-0.0252**	-0.0946	-0.0667**	-0.0658**	-0.0205
	(0.0269)	(0.0141)	(0.00581)	(0.0122)	(0.0856)	(0.0277)	(0.0276)	(0.0138)
Government Spending	-7.08e-05	0.000170	0.000154	0.000341*	0.000119	-3.98e-05	7.76e-05	-0.000286
	(0.000246)	(0.000283)	(0.000392)	(0.000205)	(0.000224)	(0.000205)	(0.000193)	(0.000341)
Regime	0.113*							-0.0220
	(0.0657)							(0.0248)
Military	-0.0619*							0.0150
	(0.0376)							(0.0398)
Agg. Gov. Ind.		0.00352***						0.00351***
		(0.000986)						(0.000850)
Civil Liberties			0.0139*					0.00349
			(0.00723)					(0.00458)
KOF Index of Glob.				0.00293**				0.00272**
				(0.00120)				(0.00127)
Monetary Freedom					0.000656**			0.000656
					(0.000297)			(0.000672)
Investment Freedom						0.000317		8.07e-06
						(0.000486)		(0.000620)
Property Rights							0.000219	0.000439
							(0.000324)	(0.000539)
Constant	2.116**	1.718***	0.248	1.054**	2.502	3.206***	3.121***	1.107**
	(0.966)	(0.459)	(0.214)	(0.422)	(1.608)	(1.018)	(0.992)	(0.435)
Observations	884	726	959	960	963	963	963	665
Number of countries	70	77	75	77	77	77	77	69
Hansen OIR test	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AR(1)	0.0214	0.0679	0.0361	0.0295	0.0312	0.0134	0.0136	0.0432
AR(2)	0.0309	0.143	0.0448	0.0510	0.0378	0.0503	0.0501	0.174
AR(3)	0.176	0.299	0.193	0.195	0.202	0.118	0.124	0.341

Note: Models (indicated by columns) estimated by System-GMM approach; in the parenthesis are robust standard errors *** p<0.01, ** p<0.05, * p<0.1. Models taken separately to see impact of variables individually (along with avoiding collinearity issue among variables); last model includes all the variables and checks their impact taken together. The null hypothesis of instrument set being valid exogenous is checked by the p-values of the Hansen Over-Identifying Restrictions (OIR) test. Arellano-Bond AR(1), AR(2) and AR(3) tests are used to check the null of no autocorrelation. To save space, time dummies not reported. Furthermore, all available lagged values of endogenous variables are used as instruments.

Property rights play an important role in reducing transaction costs (that helps enhance investment). Acemoglu and Johnson (2005; p. 953) pointed out that countries where institutions protected property rights more, performed better in terms of indictors related with investment, credit to private sector, stock markets, and income per capita. A similar result is pointed out by Acemoglu and Robinson (2012) in terms of Netherlands and UK paying greater attention to developing private property protection institutional framework, and in turn growing quicker than their neighbours. Having said that, estimated property rights remain positive but insignificant

for real GDP for both the sub-groups. It may be possible that by strengthening the supporting institutional setup, the impact of property rights on real GDP could become more effective (or in other words, significant); since the variable of property rights has been estimated to be positively significant in the non-programme countries, which are overall more developed than the programme countries, in terms of their institutional setup.

Moreover, model (8) in which all institutional determinants have been taken together, indicates results, which are overall in line with the results of the individual models, although due to the lack of overall weak supporting institutional environment, certain institutional determinants (which individually remain positive and significant in enhancing real GDP) become insignificant in terms of their impact on real GDP. Hence, it is important that impact of institutional determinants is made stronger through enhanced focus on them and their supporting institutional environment.

It may be pertinent here to indicate that the discussion will now move towards estimating and analysing Eq[2] for the purpose of establishing the first part (i.e., institutional impact on MII) of the overall indirect effect of institutional determinants on real GDP through macroeconomic stability. Tables 3.2(a) and 3.2(b), once again highlight the presence of dynamic process, since lagged MII positively and significantly impacts current MII, for both the prolonged and non-prolonged users. The same consequence can be observed in the case of non-programme countries (see Table A3.2).

In the case of prolonged users, a military officer as chief executive significantly enhances MII. Moreover, the role of particular form of regime (parliamentary or presidential) remains insignificant in impacting MII.

Aggregate governance indicator remains negative, though insignificantly for MII in the case of both prolonged- and non-prolonged users; while the impact is significantly negative in the case of non-programme countries. Also civil liberties holds a significantly negative consequence for prolonged users; the impact remains insignificant in the case of non-prolonged users and non-programme countries.

Table 3.2(a). Dependent variable -Macroeconomic Instability Index-prolonged users

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lag MII	0.509***	0.405***	0.272***	0.514***	0.340***	0.379***	0.344***	0.512***
	(0.0410)	(0.0624)	(0.0794)	(0.0367)	(0.106)	(0.0867)	(0.0464)	(0.0462)
Regime	-0.00869							-0.0262
	(0.0250)							(0.0179)
Military	0.0414**							0.0307**
	(0.0201)							(0.0147)
Agg. Gov. Ind.		-0.00139						0.000108
		(0.00103)						(0.000924)
Civil Liberties			-0.0113**					-0.00582
			(0.00555)					(0.00702)
KOF Index of Glob.				-0.00171***				-0.00129*
				(0.000524)				(0.000733)
Monetary Freedom					-0.00234**			0.000719
					(0.000955)			(0.000567)
Investment Freedom						-0.00251		0.000347
						(0.00200)		(0.000572)
Property Rights							-0.00145	0.00121
							(0.00102)	(0.000887)
Constant	0.230***	0.439***	0.338***	0.319***	0.448***	0.387***	0.320***	0.211***
	(0.0227)	(0.138)	(0.0350)	(0.0344)	(0.0756)	(0.104)	(0.0442)	(0.0650)
Observations	1,089	484	1,153	1,153	599	599	599	448
Number of countries	42	44	44	44	44	44	44	42
Hansen OIR test	1.000	1.000	0.765	1.000	0.960	0.969	1.000	1.000
AR(1)	3.37e-07	8.00e-05	0.000114	1.12e-07	0.00230	8.12e-05	1.09e-05	7.76e-05
AR(2)	0.0952	0.0536	0.0288	0.0791	0.00377	0.0147	0.00505	0.0684
AR(3)	0.117	0.0157	0.127	0.0804	0.960	0.571	0.588	0.00492

Note: Models (indicated by columns) estimated by System-GMM approach; in the parenthesis are robust standard errors *** p<0.01, ** p<0.05, * p<0.1. Models taken separately to see impact of variables individually (along with avoiding collinearity issue among variables); last model includes all the variables and checks their impact taken together. The null hypothesis of instrument set being valid exogenous is checked by the p-values of the Hansen Over-Identifying Restrictions (OIR) test. Arellano-Bond AR(1), AR(2) and AR(3) tests are used to check the null of no autocorrelation. To save space, time dummies not reported. Furthermore, all available lagged values of endogenous variables are used as instruments.

Arpac *et al.* (2008), for instance, indicated that implementation record of IMF programmes was better in those programme countries, as compared to others, where the level of trade openness improved. Similarly, in the current study, it can be seen that an improvement in KOF index of globalization significantly reduces MII in both the sub- groups, highlighting the importance of openness here. Also, monetary freedom remains significantly negative in the case of prolonged users.

The situation of investment freedom is a bit complex, where estimated investment freedom significantly enhances MII in the case of non-

Table 3.2(b). Dependent variable -Macroeconomic Instability Index- non-prolonged users

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lag MII	0.585***	0.437***	0.639***	0.488***	0.513***	0.591***	0.324*	0.539***
	(0.0398)	(0.0902)	(0.0426)	(0.0328)	(0.0382)	(0.0419)	(0.170)	(0.0964)
Regime	-0.0671							0.0478
	(0.0410)							(0.0389)
Military	0.00110							0.00212
	(0.0267)							(0.0241)
Agg. Gov. Ind.		-0.000509						-0.00602
		(0.00201)						(0.00378)
Civil Liberties			0.00274					0.0394
			(0.00255)					(0.0371)
KOF Index of Glob.				-0.00322*				-0.00313
				(0.00167)				(0.00580)
Monetary Freedom					-0.000134			0.00198
					(0.000509)			(0.00196)
Investment Freedom						0.00106**		0.00205
						(0.000512)		(0.00163)
Property Rights							-7.41e-05	0.00415
							(0.00304)	(0.00283)
Constant	0.283***	0.221**	0.218***	0.458***	0.289***	0.208***	0.211	0.0198
	(0.0256)	(0.0940)	(0.0185)	(0.0961)	(0.0424)	(0.0290)	(0.197)	(0.224)
Observations	1,844	917	2,000	2,066	996	996	996	679
Number of countries	74	84	81	82	79	79	79	70
Hansen OIR test	1.000	1.000	1.000	1.000	1.000	1.000	0.293	1.000
AR(1)	0	0.00765	3.72e-09	0	3.00e-05	1.15e-05	0.0381	0.000249
AR(2)	0.126	0.616	0.659	0.517	0.0214	0.0214	0.00726	0.758
AR(3)	0.398	0.441	0.435	0.621	0.0502	0.0388	0.173	0.424

Note: Models (indicated by columns) estimated by System-GMM approach; in the parenthesis are robust standard errors *** p<0.01, ** p<0.05, * p<0.1. Models taken separately to see impact of variables individually (along with avoiding collinearity issue among variables); last model includes all the variables and checks their impact taken together. The null hypothesis of instrument set being valid exogenous is checked by the p-values of the Hansen Over-Identifying Restrictions (OIR) test. Arellano-Bond AR(1), AR(2) and AR(3) tests are used to check the null of no autocorrelation. To save space, time dummies not reported. Furthermore, all available lagged values of endogenous variables are used as instruments.

prolonged users, while the impact remains significantly negative in the case of non-programme countries. Hence, unlike non-programme countries where institutional mechanism is better established with regard to fiscal freedom, absence of needed controls on fiscal freedom for checking capital flight (for example the case of East Asian crisis of the 1990s) may be one of the weaknesses in the overall fiscal freedom environment that may have led to such an estimated positive consequence for MII; calling in turn, for augmenting pro-investment institutional setup in the case of non-prolonged users.

Table 3.3(a). Dependent variable -real GDP- prolonged users

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lag Log Real GDP	0.997***	0.809***	0.993***	1.000***	0.983***	0.999***	1.000***	0.991***
	(0.0111)	(0.0340)	(0.0113)	(0.0103)	(0.0162)	(0.0121)	(0.0115)	(0.00981)
Log population	-0.0140***	0.0192	-0.0165***	-0.0134***	-0.0214***	-0.00320	-0.00347	-0.00173
	(0.00517)	(0.0250)	(0.00519)	(0.00468)	(0.00709)	(0.00319)	(0.00303)	(0.00380)
Government Spending	-0.000134	-0.000180	-3.07e-05	-0.000206	-6.49e-05	5.19e-06	-8.58e-05	0.000106
	(0.000459)	(0.000278)	(0.000419)	(0.000407)	(0.000561)	(0.000367)	(0.000365)	(0.000377)
Predicted MII: Regime & Military	-0.0676							
	(0.0684)							
Predicted MII: Agg. Gov. Ind.		-0.104***						
		(0.0351)						
Predicted MII: Civil Liberties			-0.0766					
			(0.0975)					
Predicted MII: KOF Index of Glob.				-0.0783				
				(0.0587)				
Predicted MII: Monetary Freedom					-0.0628			
					(0.145)			
Predicted MII: Investment Freedom						-0.220**		
						(0.106)		
Predicted MII: Property Rights							-0.187**	
							(0.0819)	
Predicted MII: All Institutional Det.								-0.201***
								(0.0581)
Constant	0.300***	1.050**	0.338***	0.250**	0.490***	0.132*	0.124*	0.188***
	(0.113)	(0.478)	(0.114)	(0.101)	(0.179)	(0.0708)	(0.0652)	(0.0438)
Observations	590	449	596	596	596	596	596	445
Number of countries	42	44	44	44	44	44	44	42
Hansen OIR test	1.000	1.000	1.000	1.000	0.992	0.989	0.999	1.000
AR(1)	0.000690	0.137	0.000757	0.000647	0.000934	0.000508	0.000461	0.00858
AR(2)	0.158	0.103	0.144	0.141	0.143	0.156	0.111	0.216
AR(3)	0.118	0.0716	0.199	0.136	0.247	0.158	0.102	0.911

Note: Models (indicated by columns) estimated by System-GMM approach; in the parenthesis are robust standard errors *** p<0.01, ** p<0.05, * p<0.1. The null hypothesis of instrument set being valid exogenous is checked by the p-values of the Hansen Over-Identifying Restrictions (OIR) test. Arellano-Bond AR(1), AR(2) and AR(3) tests are used to check the null of no autocorrelation. To save space, time dummies not reported. Furthermore, all available lagged values of endogenous variables are used as instruments.

Property rights has an insignificantly negative consequence for MII in the case of prolonged- and non-prolonged users (and the non-programme countries), giving way to the argument that the supporting institutional framework needs to be strengthened to make the impact significant for MII.

Moreover, model (8) where all institutional determinants have been taken together, are although in line with the overall analysis, but many determinants here, which have otherwise remained individually significant for reducing MII, become insignificant due to the overall weak institutional

Table 3.3(b). Dependent variable -real GDP- non-prolonged users

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lag Log Real GDP	1.002***	1.006***	1.003***	1.014***	0.982***	1.027***	0.925***	1.010***
	(0.00251)	(0.00888)	(0.00264)	(0.00971)	(0.0156)	(0.0106)	(0.0336)	(0.00514)
Log population	0.00136	0.00446	0.00202	0.00406	0.00368	0.00251	-0.0159	0.00882
	(0.00179)	(0.00313)	(0.00209)	(0.00345)	(0.00838)	(0.00664)	(0.0100)	(0.00793)
Government Spending	-2.63e-05	0.000569	0.000111	0.000347	-0.00117	0.000249	-0.000221	0.000131
	(0.000144)	(0.000476)	(0.000158)	(0.000529)	(0.00113)	(0.000737)	(0.000757)	(0.000266)
Predicted MII: Regime & Military	-0.105***							
	(0.0299)							
Predicted MII: Agg. Gov. Ind.		-0.274***						
		(0.102)						
Predicted MII: Civil Liberties			-0.0677*					
			(0.0367)					
Predicted MII: KOF Index of Glob.				-0.159*				
				(0.0905)				
Predicted MII: Monetary Freedom					-0.677**			
					(0.295)			
Predicted MII: Investment Freedom						-0.317*		
						(0.173)		
Predicted MII: Property Rights							-0.0480	
							(0.143)	
Predicted MII: All Institutional Det.								-0.0414
								(0.126)
Constant	0.000395	-0.0347	-0.0480	-0.121	0.444	-0.154	0.876**	-0.190
	(0.0417)	(0.128)	(0.0516)	(0.127)	(0.312)	(0.154)	(0.407)	(0.116)
Observations	883	725	957	958	961	961	961	665
Number of countries	70	77	75	77	77	77	77	69
Hansen OIR test	1	0.231	1	0.513	0.517	0.153	0.322	1
AR(1)	0.0430	0.0506	0.0439	0.0525	0.0458	0.0483	0.0563	0.103
AR(2)	0.0528	0.146	0.0439	0.0440	0.0153	0.0359	0.0515	0.205
AR(3)	0.202	0.309	0.182	0.181	0.220	0.169	0.186	0.361

Note: Models (indicated by columns) estimated by System-GMM approach; in the parenthesis are robust standard errors *** p<0.01, ** p<0.05, * p<0.1. The null hypothesis of instrument set being valid exogenous is checked by the p-values of the Hansen Over-Identifying Restrictions (OIR) test. Arellano-Bond AR(1), AR(2) and AR(3) tests are used to check the null of no autocorrelation. To save space, time dummies not reported. Furthermore, all available lagged values of endogenous variables are used as instruments.

supporting environment. Hence, it is important that impact of institutional determinants is made stronger through enhanced focus on them and their supporting institutional environment.

As can be seen in Tables 3.3(a) and 3.3(b) (and also Table A3.3), predicted MII in most of the cases impact negatively on real GDP; while in many cases the impact is significant, along with being negative. It can also be noted that while $\widehat{MII}$, determined on the basis of a combined effect of all the institutional determinants, is significantly negative for real GDP in the case

of prolonged users, it also impacts real GDP negatively (though insignificantly) in the case of non-prolonged users (and non-programme countries).

Summing up. Results of Tables 3.1(a) and 3.1(b) are in line with the premise laid out in [a], which indicates that institutional determinants have an overall significantly positive effect on real GDP, for both the prolonged and non-prolonged users. At the same time, support for the second premise (as indicated in [b]) that institutional determinants negatively impact MII can be seen in the estimations reflected in Tables 3.2(a) and 3.2(b), where most of the institutional determinants have a negative effect on MII, while in certain cases, the impact becomes significantly negative. Lastly, the third premise (as indicated in [c]) that the predicted MII (estimated from institutional determinants in Eq[2]) have a negative impact on real GDP, stands also supported by most of the estimations indicated by Tables 3.3(a) and 3.3(b). This, along with the fact that these institutional determinants, in the first place, are the ones that significantly impacted economic- and political institutional quality in programme countries during 1980-2009 (the same time period as of the current study)[55].

Overall it would pertinent to indicate therefore, that the missing link of institutions for reaching a positive economic growth consequence, does in fact exist in IMF programme countries. Hence, these significant institutional determinants need to be focused upon in future IMF programmes, since it can be seen that they positively affect real GDP both directly, and also indirectly through first negatively impacting MII, and then the predicted MII negatively affecting real GDP. Moreover, when the significant determinants of institutional quality for programme countries, were checked for their impact in the case of non-programme countries (during the same time period; see Tables A3.1, A.3.2, and A.3.3), the estimated results here were also in line with the three premise (indicated in the theoretical framework).

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[55] For details see chapter 2.

3.4.1. Robustness check

Table 3.4 presents the estimated impact of MII on real GDP, indicating in turn that MII significantly and negatively impacts GDP and MII, in the case of both prolonged- and the non-prolonged users. This can be seen as a robustness check for estimations of real GDP and predicted MII (in Tables 3.3(a) and 3.3(b)), where a negative relationship also exists in most of the cases. Moreover, Table 4 also indicates that MII significantly and negatively impacts real GDP in the case of non-programme countries, while the same relationship exists for the non-programme countries in most of the cases for predicted MII and real GDP (see Table A3.3).

Table 3.4. Dependent variable -real GDP- prolonged and non-prolonged users, and non-programme countries

Variables	(1)	(2)	(3)
	Prolonged Users	Non-Prolonged Users	Non-Programme Countries
Lag Log Real GDP	1.000***	0.714***	0.992***
	(0.00389)	(0.0760)	(0.00464)
Log population	-0.00467**	-0.0715***	-0.000549
	(0.00185)	(0.0274)	(0.00107)
Government Spending	0.000418**	8.22e-05	-0.000214
	(0.000208)	(0.000179)	(0.000196)
MII	-0.0856***	-0.0759***	-0.0890***
	(0.0196)	(0.0125)	(0.0238)
Constant	0.0644	3.423***	0.202***
	(0.0400)	(0.965)	(0.0705)
Observations	596	963	612
Number of countries	44	77	51
Hansen OIR test	1.000	1.000	1.000
AR(1)	0.000562	0.0175	0.00127
AR(2)	0.103	0.0740	0.622
AR(3)	0.998	0.123	0.476

Note: Models (indicated by columns) estimated by System-GMM approach; in the parenthesis are robust standard errors *** $p<0.01$, ** $p<0.05$, * $p<0.1$. The null hypothesis of instrument set being valid exogenous is checked by the p-values of the Hansen Over-Identifying Restrictions (OIR) test. Arellano-Bond AR(1), AR(2) and AR(3) tests are used to check the null of no autocorrelation. To save space, time dummies not reported. Furthermore, all available lagged values of endogenous variables are used as instruments.

3.5. Conclusion

The problem of a poor performance of IMF programmes in terms of economic growth in recipient countries on one hand, and NIE literature's highlighting the important role institutions play in enhancing economic growth in many countries, on the other, created in turn a 'missing link' that

served as a motivation for the current study. The time duration of the study was 1980-2009, and the System-GMM approach was applied for carrying out the analysis. Subsequently, the estimated impact of institutional determinants (both political and economic) was found to be overall significant for enhancing real economic growth, both for prolonged- and non-prolonged users of IMF. At the same time, institutional determinants were also found to be overall significant in reducing macroeconomic instability. Moreover, predicted MII in turn also impacted negatively on real GDP. Hence, it has been pointed out that institutional determinants positively impacted real GDP both directly, as well as indirectly, through the channel of macroeconomic stability. The above estimations were carried out with institutional determinants, which in chapter 2 were found to be significant in the programme countries. As an extension, when these significant institutional determinants were checked in the case of non-programme countries, similar estimated results were obtained, as in the case of programme countries.

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Table A3.1. Dependent variable -real GDP- non-programme countries

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lag Log Real GDP	0.976***	0.984***	0.981***	0.969***	0.938***	0.951***	0.944***	0.987***
	(0.00812)	(0.0199)	(0.00687)	(0.00900)	(0.0348)	(0.0108)	(0.0107)	(0.00379)
Log Population	0.000704	-0.00137	-0.000686	-0.00275	-0.0651	0.00167	0.00202	0.000561
	(0.00243)	(0.00292)	(0.00151)	(0.00250)	(0.0428)	(0.00550)	(0.00518)	(0.00120)
Government Spending	0.000221	-0.000641	-0.000334	-4.49e-05	-1.50e-05	0.000251	0.000228	-0.000200
	(0.000189)	(0.000564)	(0.000279)	(0.000202)	(0.000200)	(0.000210)	(0.000216)	(0.000138)
Regime	0.0455***							0.0123
	(0.0145)							(0.00961)
Military	-0.0206							0.00160
	(0.0216)							(0.0122)
Agg. Gov. Ind.		0.00130**						0.000476
		(0.000523)						(0.000419)
Civil Liberties			0.00507***					-0.00368
			(0.00194)					(0.00250)
KOF Index of Glob.				0.00159***				-0.000310
				(0.000582)				(0.000406)
Monetary Freedom					0.000253			0.000293
					(0.000220)			(0.000348)
Investment Freedom						0.000121		4.91e-05
						(0.000293)		(0.000155)
Property Rights							0.000801*	-0.000171
							(0.000482)	(0.000263)
Constant	0.167*	0.126	0.188**	0.236***	1.609**	0.420***	0.539***	0.140***
	(0.0900)	(0.143)	(0.0844)	(0.0860)	(0.650)	(0.113)	(0.107)	(0.0323)
Observations	606	465	610	611	610	610	613	457
Number of countries	47	52	51	50	52	52	52	46
Hansen OIR test	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
AR(1)	0.00100	0.0154	0.000881	0.000959	0.00131	0.000863	0.00115	0.0216
AR(2)	0.465	0.202	0.729	0.566	0.618	0.524	0.576	0.188
AR(3)	0.465	0.0890	0.692	0.562	0.535	0.506	0.507	0.0784

Note: Models (indicated by columns) estimated by System-GMM approach; in the parenthesis are robust standard errors *** p<0.01, ** p<0.05, * p<0.1. Models taken separately to see impact of variables individually (along with avoiding collinearity issue among variables); last model includes all the variables and checks their impact taken together. The null hypothesis of instrument set being valid exogenous is checked by the p-values of the Hansen Over-Identifying Restrictions (OIR) test. Arellano-Bond AR(1), AR(2) and AR(3) tests are used to check the null of no autocorrelation. To save space, time dummies not reported. Furthermore, all available lagged values of endogenous variables are used as instruments.

Table A3.2. Dependent variable -Macroeconomic Instability Index- non-programme countries

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lag MII	0.558***	0.641***	0.648***	0.538***	0.704***	0.699***	0.734***	0.439***
	(0.0332)	(0.125)	(0.0328)	(0.0299)	(0.0669)	(0.0707)	(0.0607)	(0.0950)
Regime	0.0570							0.358
	(0.0424)							(0.622)
Military	-0.0140							-0.378
	(0.0284)							(1.478)
Agg. Gov. Ind.		-0.00484*						-0.0134***
		(0.00267)						(0.00445)
Civil Liberties			0.00330					-0.00505
			(0.00257)					(0.0594)
KOF Index of Glob.				-0.000446				-0.00383
				(0.000769)				(0.0134)
Monetary Freedom					-0.000416			0.00254
					(0.000992)			(0.00222)
Investment Freedom						-0.00173*		0.00332
						(0.00103)		(0.00220)
Property Rights							-0.000596	-0.00116
							(0.00118)	(0.00214)
Constant	0.225***	0.457***	0.200***	0.293***	0.241***	0.312***	0.152**	-0.500
	(0.0274)	(0.170)	(0.0211)	(0.0510)	(0.0680)	(0.0648)	(0.0707)	(1.726)
Observations	1,316	596	1,418	1,382	635	635	637	474
Number of countries	49	55	54	52	52	52	52	47
Hansen OIR test	1.000	0.200	1.000	1.000	0.703	0.861	0.969	1.000
AR(1)	7.45e-07	0.000712	3.07e-07	3.12e-07	6.07e-06	2.87e-06	7.63e-06	2.52e-05
AR(2)	0.675	0.399	0.961	0.762	0.309	0.335	0.288	0.659
AR(3)	0.180	0.297	0.783	0.502	0.493	0.564	0.498	0.750

Note: Models (indicated by columns) estimated by System-GMM approach; in the parenthesis are robust standard errors *** p<0.01, ** p<0.05, * p<0.1. Models taken separately to see impact of variables individually (along with avoiding collinearity issue among variables); last model includes all the variables and checks their impact taken together. The null hypothesis of instrument set being valid exogenous is checked by the p-values of the Hansen Over-Identifying Restrictions (OIR) test. Arellano-Bond AR(1), AR(2) and AR(3) tests are used to check the null of no autocorrelation. To save space, time dummies not reported. Furthermore, all available lagged values of endogenous variables are used as instruments.

Table A3.3. Dependent variable -real GDP- non-programme countries

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Lag Log Real GDP	0.944***	0.976***	0.989***	0.985***	0.983***	0.988***	0.982***	1.029***
	(0.0340)	(0.00793)	(0.00593)	(0.00656)	(0.00517)	(0.00702)	(0.0103)	(0.0884)
Log population	-0.0603	-0.000369	-0.000547	-0.00115	-0.000736	-0.00356	-0.00316	-0.0658*
	(0.0412)	(0.00160)	(0.00112)	(0.00136)	(0.00134)	(0.00462)	(0.00528)	(0.0392)
Government Spending	-8.42e-05	-0.000410	-0.000379	-0.000340	-0.000285	-0.000442	-0.000270	-0.000375
	(0.000202)	(0.000342)	(0.000252)	(0.000245)	(0.000220)	(0.000284)	(0.000244)	(0.000382)
Predicted MII: Regime & Military	-0.0433**							
	(0.0220)							
Predicted MII: Agg. Gov. Ind.		-0.126***						
		(0.0342)						
Predicted MII: Civil Liberties			-0.0839***					
			(0.0270)					
Predicted MII: KOF Index of Glob.				-0.113***				
				(0.0309)				
Predicted MII: Monetary Freedom					-0.171**			
					(0.0798)			
Predicted MII: Investment Freedom						-0.163***		
						(0.0445)		
Predicted MII: Property Rights							-0.0402	
							(0.0479)	
Predicted MII: All Institutional Det.								-0.281
								(0.297)
Constant	1.492**	0.307***	0.180**	0.286***	0.228***	0.242*	0.265	2.023
	(0.675)	(0.0926)	(0.0744)	(0.0966)	(0.0827)	(0.133)	(0.166)	(2.394)
Observations	605	464	608	610	609	609	611	457
Number of countries	47	51	50	50	51	51	51	46
Hansen OIR test	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.992
AR(1)	0.00104	0.0166	0.00101	0.000957	0.00105	0.000799	0.000890	0.0191
AR(2)	0.593	0.222	0.774	0.754	0.895	0.805	0.693	0.215
AR(3)	0.625	0.0990	0.732	0.718	0.583	0.767	0.668	0.0423

Note: Models (indicated by columns) estimated by System-GMM approach; in the parenthesis are robust standard errors *** p<0.01, ** p<0.05, * p<0.1. The null hypothesis of instrument set being valid exogenous is checked by the p-values of the Hansen Over-Identifying Restrictions (OIR) test. Arellano-Bond AR(1), AR(2) and AR(3) tests are used to check the null of no autocorrelation. To save space, time dummies not reported. Furthermore, all available lagged values of endogenous variables are used as instruments.

Table A.3.4. Group-wise list of IMF member countries

Australia	France	Montenegro	Spain
Austria	Germany	Myanmar	Suriname
Bahamas	Greece	Namibia	Swaziland
Bahrain	Iran, Islamic Republic of	Netherlands	Sweden
Belgium	Ireland	New Zealand	Switzerland
Bhutan	Italy	Nigeria	Syrian Arab Republic
Botswana	Japan	Norway	Timor-Leste
Brunei Darussalam	Kiribati	Oman	Tonga
Canada	Kuwait	Palau	Turkmenistan
Colombia	Libya	Paraguay	Tuvalu
Cyprus	Luxembourg	Qatar	United Arab Emirates
Denmark	Malaysia	San Marino	United Kingdom
El Salvador	Malta	Saudi Arabia	United States
Eritrea	Marshall Islands	Singapore	Vanuatu
Finland	Micronesia, Federated States of	South Sudan	

Programme Countries

Non-Prolonged Users

Afghanistan	Djibouti	Korea, Republic of	Solomon Islands
Angola	Ecuador	Kosovo	Somalia
Antigua and Barbuda	Egypt, Arab Republic of	Latvia	Spain
Azerbaijan, Republic of	Equatorial Guinea	Lebanon	Sri Lanka
Bangladesh	Estonia, Republic of	Lesotho	St. Kitts and Nevis
Barbados	Ethiopia	Liberia	St. Lucia
Belarus	Fiji	Lithuania, Republic of	St. Vincent and the Grenadines
Belize	Gabon	Maldives	Syrian Arab Republic
Bosnia and Herzegovina	Gambia	Mauritius	Thailand
Brazil	Grenada	Moldova	Togo
Cambodia	Guatemala	Morocco	Trinidad and Tobago
Cape Verde	Guinea-Bissau	Nepal	Tunisia
Central African Republic	Haiti	Papua New Guinea	Ukraine
Chile	Hungary	Peru	Uruguay
China	Iceland	Poland	Uzbekistan
Comoros	India	Portugal	Venezuela, República Bolivariana de
Congo, Democratic Republic of the	Indonesia	Romania	Vietnam
Congo, Republic of	Iraq	Samoa	Yemen, Republic of
Costa Rica	Israel	Serbia	Zimbabwe
Cyprus	Jamaica	Singapore	
Czech Republic	Kazakhstan, Republic of	Slovak Republic	
Côte d'Ivoire	Kenya	Slovenia	

Prolonged Users

Albania	Dominica	Madagascar	Philippines
Algeria	Dominican Republic	Malawi	Russian Federation
Argentina	Georgia	Mali	Rwanda
Armenia	Ghana	Mauritania	Senegal
Benin	Guinea	Mexico	Serbia
Bolivia	Guyana	Mongolia	Sierra Leone
Bulgaria	Honduras	Mozambique	Tajikistan
Burkina Faso	Jordan	Nicaragua	Tanzania
Burundi	Kyrgyz Republic	Niger	Turkey
Cameroon	Lao People's Democratic Republic	Pakistan	Uganda
Chad	Macedonia	Panama	Zambia

Note: Countries are listed in alphabetical order. Also, the groups correspond to the time period of 1980-2009.

Chapter 4

IMF programmes and institutional quality determinants: economic scenarios in Pakistan

4.1. Introduction

Pakistan has been a prolonged user[56] of IMF resources since the late 1980s. From table 2.1 (in chapter 2), it could be seen that during 1980-2009, Pakistan was one of the 44 prolonged users; remaining under IMF programmes for half of those thirty years (where Mali and Senegal were at the top with twenty-three years each). Moreover, Pakistan remained a prolonged user during both the decades of 1990s and 2000s. Even after being a prolonged user it could not achieve sustained macroeconomic stabilization, while yearly economic growth on average since 1980s was substantially lower than that of the two decades before it (IEO, 2002, p. 119-121).

Although, Article I, clause (v) of the Articles of Agreement of the International Monetary Fund[57] indicates that resources will be made available to members on a 'temporary' basis, it is ironic that since 1988 Pakistan has entered more than twelve IMF programmes (and currently is in the 'Extended Fund Facility' IMF programme); while the programme completion rate has been abysmally low as only one of the programmes so far has been able to meet the macroeconomy related targets (Ahmad and Mohammad, 2012)! The fact that Pakistan has been able to get frequent IMF financial support underlines not only the recidivist behaviour but also raises questions about the IMF's criteria behind negotiating future programmes with recipient countries that had poor programme implementation record. Having said that this easy availability of money appears to have allowed successive governments to continuously postpone

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[56] According to IEO (2002, p. 9 and p. 24) a country is considered to be a prolonged user if during a decade it remains for at least seven years in an IMF programme.
[57] http://www.imf.org/external/pubs/ft/aa/pdf/aa.pdf

undertaking hard reforms, and this lack of political will to implement the reform agenda negotiated with the IMF, exists as one of the reasons behind the poor performance under the programmes, in terms of macroeconomic stability and economic growth.

Notwithstanding the fact that many programmes went off-track in the early stages, the rigid, one-size-fits-all kind of programme conditionalities overly squeezed the demand side to meet certain macroeconomic targets, without being able to focus on the supply side enough to have positive consequences for economic growth. Moreover, the underlying neo-classical behavioural assumptions of the programme design saw a world of no transaction costs, and hence not much role of institutions. The fact that institutional environment could neither be focused upon or prioritized in the scope and sequencing of conditionalities, meant programme neglect towards enhancing the underlying political and economic institutional determinants like lack of appropriate level of governance, property rights protection, and freedoms that provide a conducive environment for economic activity and its regulation.

New Institutional Economics (NIE) literature, on the other hand, has pointed towards substantial empirical evidence in the last three decades or so, indicating that countries, which focused on improving determinants of institutional quality witnessed sustained macroeconomic stability and economic growth.

Given this background, I intend to conduct counterfactual simulation analysis for Pakistan, which is a representative prolonged user, since it has been one of the most frequent users of IMF resources, and which has not been able to attain either sustained macroeconomic stability or positive consequences for economic growth. More specifically I will backcast the time series data of Pakistan by redesigning the IMF programme, in which, the traditional Fund approach is combined with the framework of NIE. I will look at: 'Had Fund's programme been designed to focus on strengthening institutions then what would have been the impact on macroeconomic stability and economic growth of Pakistan?' This analysis, by redesigning the Fund's policies through enhanced focus on

strengthening institutions, is expected to bring sustained positive long-term consequences for macroeconomic stability and economic growth.

Outline of the study is as follows: literature will be reviewed in Section 4.2, data and methodology will be discussed in Section 4.3, followed by discussion of estimation and results in Section 4.4. The study will be concluded in Section 4.5.

4.2. Literature Review

IEO (2002, p. 119) pointed out that Pakistan's yearly economic growth was on average around 6-7 percent during the 1970s to the later part of 1980s, and the country was able to sustain its deficits in the fiscal and external sectors, without needing any major foreign assistance. This situation changed during late 1980s when economic growth started to deteriorate and inability to deal successfully with deficits led to build up of debt. Hence, the country entered successive IMF programmes in the years to follow, starting around the later part of 1980s.

Looking back, the experience proved to be worse in terms of yearly economic growth during 1988-2000, which on average stood at around a little less than 4 percent, while at the same time major macroeconomic indicators, for example, inflation rate, foreign direct investment, export growth, and import cover in terms of foreign exchange reserves, all slacked when compared to the earlier two decades (IEO, 2002, p.119-121). Since 2000, the situation has not changed much in terms of sustained macroeconomic stability and economic growth, although Pakistan continues to rely on IMF resources (with only an absence of few years during mid 2000s). Weaknesses in the rigid IMF's financial programming framework, as shown by Killick (1995) and others, the limitations of the programme design to address the underlying institutional problems, along with easily available IMF finances, even at the back of low programme completion rates by Pakistan, could not allow the country to achieve sustained macroeconomic stabilization and economic growth.

The importance of focusing on institutional determinants could be seen from the fact that once a governance variable was focused upon in

prolonged users, any difference in economic outlook between them and the non-prolonged (or temporary) users became insignificant (IEO, 2002, p. 98). Yet institutional determinants were not focused upon as such in IMF programmes. Pakistan was no exception. Kemal (2003) pointed out that the (low) level of institutional quality deteriorated further since the early 1970s; with most deterioration happening in the 1990s. Greater institutional focus was all the more important since the quality of institutional determinants was quite on the lower side (when compared with other countries) as indicated by the ranking of Pakistan for many indicators of institutional quality (Khawaja and Khan, 2011, p. 810).

IMF programmes, which are basically built on Polak model (Polak, 1957), primarily try to fix Balance of Payments imbalances (and indirectly the fiscal imbalance of the government) by targeting monetary aggregates. But here too critics, including Killick (1995, p. 133), indicate that by focusing too much on monetary aggregates targeting, programmes are more tilted on the quantitative aspects and do not pay much attention to the qualitative basis of the reform agenda. Internalizing this criticism, IMF did try to enhance the scope of programmes by including more supply side initiatives, but the inability of the Fund to move away from the neo-classical/monetarist assumptions that have been shown by NIE literature to be quite out of sync with how the economies generally work (Groenewegen et al., 2010, p.13-24), has therefore not allowed IMF programmes to include much needed institutional focus and thus have not overall witnessed improved programme impacts.

Pakistan's high programme incompletion rate may be due to the underlying behavioural assumptions of IMF programmes (as indicated above) that have served as a disincentive for recipient countries, especially the prolonged users/developing countries that would, otherwise, see themselves more aligned to a world as depicted by the assumptions of NIE. Another reason may be the easy availability of IMF resources at the back of incomplete programmes by recipient countries. Incompetent governments have seen this as an opportunity to either follow some initial programme conditionalities to get the first few financial installments from IMF, and then leave the programme, and then start another programme after a little while to repeat the same; all this to postpone doing the hard economic

reforms at the back of easily and frequently available IMF resources. This has worked as a moral hazard and have set in recidivist behaviour.

IMF has assumed in its programmes a high level of policy implementation of the conditionalities. In the wake of overall weak institutional environment in programme countries, where the situation is much worse on average in the case of prolonged users, expecting a high implementation rate of programme conditionalities has been over-ambitious from IMF to say the least. This is because, in the case of prolonged users like Pakistan, in particular, such a high level of implementation has seen to be missing due to the weak institutional environment, resulting in poor implementation of programme conditionalities. For example, starting from the very monetary sector, programme design assumes a predictable and stable demand of money in the economy (Killick, 1995, p 132), but in a weak institutional environment of programme countries in general and prolonged users (like Pakistan) in particular, such assumptions are overly restrictive and unrealistic. Even forecasting the underlying variability in circulation in income velocity lacks much precision, and hence reduces programme objectivity/implementation record with relation to monetary aggregates targeting.

The underlying neo-classical/monetarist basis of programme design falls short of understanding the domestic environment particularly of the prolonged users, which are mostly developing countries. One attribute is the opportunistic behaviour whereby satisfying self-interest does not always lead to overall welfare gain in the society, as otherwise alluded to in the metaphor of 'invisible hand' (Groenewegen *et al.*, 2010, p.15). In fact, the political and economic institutions collude to serve their own vested interests and therefore establish an 'extractive' institutional setup, which results in extraction of resources from the many to the group(s) that forms this collusion (Acemoglu and Robinson, 2012, p. 74-82; Acemoglu, 2006; Acemoglu, 2008)[58]. The incentive system in such an institutional setup does not promote competition, but rather rewards behaviour that is loyal to

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[58] 'Inclusive economic institutions' on the other hand, work towards and facilitate participation of people in economic activity. Moreover, an inclusive/extractive economic institution results because of an inclusive/extractive political institutional setup (Acemoglu and Robinson, 2012, p. 74-82; Acemoglu, 2006; Acemoglu, 2008).

sustaining this extractive institutional arrangement. This goes against the spirit of perfect competition, since the price signal that comes out of the market favours a certain lobby or individual, rather than being a natural outcome of true competition between buyers and sellers. These equilibrium market prices are sub-optimal and hence do not result in the optimal allocation of resources. In such a collusive institutional environment, markets no longer produce Pareto efficiency[59], and as has been in the case of prolonged users like Pakistan, there are gross productive and allocative inefficiencies. In turn, it is hard to therefore see in developing countries like Pakistan much automatic clearing of markets and contracts being enforced, without an active role of regulation (privately and through government), and existence of firms, in addition to markets; all as providing safeguards through governance structures that come about through institutions. Hence, IMF programmes need to move away to a NIE framework whose assumptions are cognizant of all these much probable possibilities, which are very much present in countries like Pakistan, and therefore underline the importance of institutions.

Moreover, IMF programmes not only lack focus on allocative and productive efficiencies (aspects of static efficiency) but also on features pertaining to dynamic efficiency. Internalizing the concept of dynamic efficiency by IMF would entail enhancing the scope of its programmes to focus on innovation and the various linkages and elements that enable to reach it. This would mean coming up with programme conditionalities that lower the risks that entrepreneurs face by focusing on the role of government, by improving the environment that ensures enforceability of contracts and effectively assigns and enforces property rights (Groenewegen *et al.*, 2010, p.16-17).

IMF programmes also need to internalize that achieving static and dynamic efficiencies entail bearing transaction costs, and that they add to production costs, and overall impact economic growth of a country. In countries like Pakistan, where a lot of information asymmetries exist, and where weak governance, poor enforceability of contracts and property rights, has led to

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[59] In such a situation, welfare of one person can only be increased by decreasing someone else's welfare (Groenewegen *et al.*, 2010, p.16).

high level of transaction costs. In this regard, North (1994, p. 360) pointed out that institutions matter when doing transactions that entail high costs.

In the case of extractive nature of institutions in Pakistan (Khawaja and Khan, 2011, p. 810), IMF programmes needs to enhance the scope to introduce conditionalities (mutually agreed between IMF and national authorities) that lower transaction costs in the case of firstly, market transactions that Commons (1931) referred to as 'bargaining transactions' between individuals that sell and buy at the market level. Secondly, the costs with regard to managerial transactions between superiors and subordinates at the organizational level also need to be made optimal. Lastly, political transactions at the level of authorities are also brought into the scope of IMF programmes, so that property rights, taxes, and positive incentives are provided in such a way that the related transaction costs get rationalized and that distribution of national wealth gets done optimally.

Libecap (1989) indicated that literature points out that the way property rights are allocated strongly determine the power distribution in the society. Allocation of property rights in a way that a group has great control results in the formulation of institutions that helps them gain immense power with the passage of time, raises a discussion to correct this unjustified initial distribution of property rights through an institutional reform effort (Groenewegen *et al.*, 2010, p.130-31). In the case of Pakistan, inordinate distribution of land (mainly agricultural) among a select few locals was made by the British during the time of colonization, in return for this beneficiary group to offer services, which included, controlling local populations (that worked on these lands as peasants or labourers, and also influencing the nearby small land holders by putting weight on them by their sheer immense size of presence) from starting any rebellion against the colonizers. Hence, such a distribution of property rights allowed these groups to gain a lot of power and influence, since many people in the form of peasants and labourers generally, became reliant for their livelihoods on them, and also earning from the produce of land gave this group a significant material/financial edge compared to many others in the society. This initial distribution of property rights was artificially done, since the recipient of such property rights did not otherwise have any natural claim (in terms of inheritance or personal monetary means) to justify such a grant

of rights. This distribution put in place not only too much land in the hands of few individuals or families, which after the independence from British (resulting in the formation of Pakistan) were left with a lot of control and power in society to manipulate institutions so as to perpetuate their power ever further. In an independent Pakistan, these powerful political and economic elites colluded together to evolve political and economic institutions in an extractive way (transferring resources from the many (the masses) to the few (the elites)), and hence achieved greater perpetuation of their power and reaped larger material gains over time. Hussain (1999) and Khawaja and Khan (2009, p. 18) also pointed towards this extractive behaviour of elites in Pakistan.

Therefore, IMF programmes not only need to focus on institutional determinants, but also need to help programme countries like Pakistan, move towards inclusive institutions. One of the ways for IMF to do this, is to base the programmes more on the framework of NIE, which does not leave most of interaction of agents in the economy on market forces alone, but rather acknowledges the importance of institutions at the back of the realization that agent's rationality is bounded, that opportunistic behaviour can exist to safeguard vested interests, that transaction costs exists, that there is a need to enforce contracts (more so in an ever increasing environment of impersonal exchange) and that an environment is needed for optimal allocation and adequate safeguard of property rights.

IMF programmes by basing its programmes on neo-classical/monetarist behavioural assumptions, have basically seen macroeconomic issues, mainly the BOP imbalance, as a consequence of not properly targeting of monetary aggregates by the recipient country. In this sense, it limited its scope by mainly to focusing on the demand side of the economy, while putting less emphasis on the institutional determinants (on the supply side), which have been shown in literature to play an equally important role in positively impacting macroeconomic stability and economic growth (Khan and Knight, 1985; Acemoglu *et al.*, 2003). NIE framework underlines the importance of focusing on institutional determinants as they are important for improving income per capita (Acemoglu and Johnson, 2005; Afonso and Jalles, 2011). Therefore, it seems appropriate for IMF programmes to constructively address criticism on programme design by adopting NIE

framework. In doing so, it is hoped the importance institutional determinants play for macroeconomic stability and economic growth will be realized.

4.3. Data and Methodology

4.3.1. Theoretical design

The presence of powerful elites (both politicians and economic elites) take advantage of the overall weak institutional setup and in turn are able to overcome checks placed through macroeconomic policies in one way or the other. In doing so they are able to extract resources and in turn become a source of macroeconomic instability, while traditional macroeconomic variables are only symptoms of the deeper institutional problem (Acemoglu *et al*., 2003). At the same time, weak institutional setup may also lead to coups, as was seen on many occasions in Pakistan (Acemoglu and Robinson, 2001).

IMF programmes based on traditional neo-classical/monetarist assumptions have not put attention to institutional determinants that can check this opportunistic behaviour. Such a weak institutional has allowed political and economic elites in prolonged users like Pakistan to take advantage of the weak institutional environment and extract resources (Hussain, 1999; Khawaja and Khan, 2009, p. 18). Moreover the over-emphasis of the programmes on traditional macroeconomic variables mostly, and not much on the institutional determinants, have not strengthened the needed institutional environment in which macroeconomic variables can effectively impact macroeconomic consequences. At the same time, inadequate institutional setup does not boost supply side factors, including business and investment environment that negatively impacts economic growth. Also, Haghighi *et al.* (2012), in a case study conducted on Iran, pointed out that there existed a long-term relation between economic growth and macroeconomic instability, and from chapter 3 it could be seen that a increase in macroeconomic instability negatively impacts economic growth.

Given this background, in the current study, it is proposed that improvement in KOF Index of Globalization will result in a positive impact on macroeconomic instability and real economic growth. An additional proposition will be that increase in macroeconomic instability will also reduce real economic growth. The underlying proposition will be that macroeconomic instability will depend on institutional environment as well (and not just macroeconomic variables), since it will also be reduced by the improvement in determinants of institutional quality (in the current case being KOF Index of Globalization).

Based on the relationship between institutions, macroeconomic instability and economic growth, established in the last chapter, this chapter aims at estimating the effect of improvement in institutional quality on macroeconomic instability and economic growth. More specifically, counterfactual analysis will be done to estimate the effects of indicators of institutional quality on the index of macroeconomic instability and on the average growth rate of GDP of Pakistan. For the analysis, however, continuous data are required; therefore we have focused only on KOF Index of Globalization as indicators of institutional quality. The following discussion, therefore, focuses on the theoretical linkages of globalization on the sub-indices of macroeconomic instability and hence on economic growth.

The first sub index of macroeconomic instability is the inflation rate. Inflation rate escalates instability through its effect on economic decisions regarding money demand, savings, and investment, which in turn harm economic growth. KOF Index of Globalization is an indicator of globalization. The economic dimension of globalization affects inflation rate through trade which is the main cause of purchasing power parity. Less restricted trade not only controls average inflation rate, it also minimize variability of the inflation rate.

Globalization has two competing effects on exchange rate variability. On the one hand globalization makes the country more vulnerable to foreign shocks, thereby making exchange rate more volatile. On the other hand, more globalized economy can potentially earn more foreign exchange, accumulation of which saves domestic currency from speculative attacks.

So exchange rate remains stable. Furthermore, both stable prices and exchange rate stability lead to stable real effective exchange rate.

The fundamental requirement of achieving higher growth rate is the enabling environment in which economic decisions are taken. If there is uncertainty regarding future inflation rate or exchange rate, then businesses cannot take optimal decisions regarding investment, saving and international trade. The sub-optimality of economic decisions discourages improvement in living standard of the citizens. Therefore, reducing macroeconomic instability is of utmost importance for achieving higher growth rate.

4.3.2. Sample

Time series data on Pakistan is taken for the duration 1980-2014 (since, during this time, Pakistan frequently used IMF resources). The data has been enhanced from 2009 (in the rest of thesis) to 2014, to avoid the degrees of freedom issue while applying the VAR (Vector Autoregression) approach.

4.3.3. Data and variable description

From chapter 2, significant determinants of political- and economic institutional quality were estimated for IMF programme countries. In order to carry out Structural VAR (SVAR) analysis it is important to have variables that are neither qualitative, along with covering adequate time duration (for avoiding degrees of freedom issue). KOF index of globalization (or simply, 'KOF') has therefore been taken and its impact is being seen on MII and real economic growth.

Data on real GDP (RGDP) is taken from the World Economic Outlook (WEO) of the IMF[60].

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[60] https://www.imf.org/external/pubs/ft/weo/2015/01/weodata/download.aspx

Based on the methodology and definitions of Ismihan (2003), Macroeconomic Instability Index (MII)[61] has been constructed using the following five[62] indicators:

(i) Inflation rate (INF; calculated by taking data on average consumer prices from WEO[63]),

(ii) Fiscal deficit (FD) as percentage of GDP[64].

(iii) Public debt (PD; domestic debt plus external debt and liabilities) as percentage of GDP[65].

(iv) exchange rate variability (ERV) has been calculated on the basis of 12 month end-of-period nominal exchange rate in SDR, taken from International Finance Statistics (IFS; IMF)[66] and,

(v) Real Effective Exchange Rate Index (REER; taken from WDI[67] of the World Bank). This indicator has been included in Ismihan (2003) to augment MII to include the impact of competitiveness in it. Furthermore, it needs to be indicated that there exists another index in this regard called the Macroeconomic Stability Subindex[68], produced by World Economic Forum. The reason it has not been employed in the current analysis is because of lack of consistency of its methodology; in turn, inhibiting comparability of data over longer periods of time.

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[61] For details, see Ismihan (2003; pp. 214-15), who constructed MII.
[62] It may be indicated here that while Ismihan (2003) only included the first four indicators to construct the MII, the current study augments it with one more indicator.
[63] https://www.imf.org/external/pubs/ft/weo/2015/01/weodata/download.aspx
[64] Data source is State Bank of Pakistan (http://www.sbp.org.pk/) and Ministry of Finance, Government of Pakistan (http://finance.gov.pk/survey_1314.html). Also, data on fiscal deficit is taken instead of budget deficit due to availability of data in this format for Pakistan.
[65] Data source is State Bank of Pakistan (http://www.sbp.org.pk/).
[66] Data taken from IFS CD ROM (IMF).
[67] http://data.worldbank.org/data-catalog/world-development-indicator
[68] http://www.weforum.org/pdf/Global_Competitiveness_Reports/Reports/GCR_05_06/Composition_of_the_Growth_Competitiveness_Index

4.3.4. Econometric methodology

The prime objective of this chapter is to conduct counterfactual analysis for the effect of institutional quality on macroeconomic instability and economic growth. For this purpose we have constructed a VAR (Vector Autoregression) using all sub-indices of MII and indices of institutional quality – KOF index of globalization.

Thereafter, appropriate restrictions are imposed on contemporaneous relationship of variables to make VAR identified and to recover structural shocks. These shocks are then used to trace out the effect of KOF on sub-indices of MII, and real economic growth, respectively.

In the next step, counterfactual simulations are conducted, assuming a hypothetical situation in which IMF programme has an institutional focus. More specifically, the following three scenarios are assumed, with respect to improvement in institutional quality and their effect will be simulated on MII and log of real GDP, respectively:

a) low scenario: institutional determinants are enhanced by 5 percent;
b) moderate scenario: institutional determinants are enhanced by 10 percent; and
c) optimistic scenario: institutional determinants are enhanced by 15 percent.

The reason for taking these particular values is to see how enhancement in institutional quality in small steps impact MII and real economic growth.

This procedure gives us one-time simulated figures. However, to be confident we have also done stochastic simulation in which the procedure, of finding counterfactual MII and economic growth rate, is repeated for ten thousand times using bootstrap procedure, and then the characteristics of distribution of MII and real economic growth in each scenario is presented and explained below.

The impact of MII is also seen on real economic growth. Hence, the impact of institutional determinants is seen both directly on MII and real economic

growth, and also on real economic growth indirectly by seeing how a reduction in MII impacts real economic growth.

The Structural VAR Approach. VAR has been employed by numerous researchers since Sims (1980), as an alternative to the traditional simultaneous equations systems in which the difference between endogenous and exogenous variables is not only difficult to find, but also looking for appropriate instruments is virtually impossible. Moreover, interdependence among variables is analyzed through impulse response functions. However, some restrictions need to be put on structural parameters, and structural shocks need to be recovered before estimating impulse response functions.

There are three types of restrictions imposed on structural parameters, namely the Choleski decomposition approach, Sims-Bernanke approach, and Blanchard and Quah approach. For example, in Choleski decomposition method, the ordering of the variables is done so that the matrix of structural parameters is a lower triangular and residuals are orthogonalized across equations (Leamer,1985; Cooley and LeRoy, 1985). At the same time, instead of relying on identifying structural parameters in triangular fashion, Sims (1986) and Bernanke (1986) highlighted the role of economic theory in identifying structural shocks. In this regard, the restrictions may not however be on contemporaneous relationships among variables, and identifying restrictions may render the system over-identified. Finally, Blanchard and Quah (1989) proposed identification strategy through economic theory by imposing long run restrictions of one variable on the other.

Whether or not variables in the VAR should be differenced, when they are non-stationary, is a long debated issue. In this regard, according to Sims *et al*. (1990) transforming VAR, if variables are non-stationary, into stationary cointegrated system is not necessary. But some econometricians like Garratt *et al*. (1998) warn against making variables stationary if they contain unit root. However, if there exists long run equilibrium relationship among variables, VAR in level can be used, even if variables in the system are non-stationary (Sims *et al*., 1990;

Sims, 1992). The essential requirement however, is that residuals from VAR model should be free from autocorrelation and heteroskedasticity.

In the light of the discussion above, it appears pertinent to lay down below some of the technical details of the VAR model used in the current study.

Suppose the following dynamic structural equations explain the dynamics of an economy[69].

$$BY_t = \gamma_0 + \sum_{i=1}^{p} \gamma_1^i Y_{t-i} + \sum_{i=1}^{p} \gamma_2^i Z_{t-i} + \varepsilon_t \qquad [4.1]$$

Here, B is the matrix of structural parameters representing contemporaneous response coefficients, Y_t is a vector of variables, containing indices of macroeconomic instability index, and indicators of institutional quality. Where, γ_0 is a vector of constants, γ_1^i represents matrices of endogenous variables, while γ_2^i represent coefficient matrices of exogenous variables. Moreover, ε_t represents vector of structural innovations, which are IID (independently and identically distributed).

There are six variables in the VAR model: inflation rate (INF), exchange rate (ER)[70], real effective exchange rate (REER), public debt (PD) and fiscal deficit (FD). Here, both PD and FD are taken as ratios of GDP, while KOF index of globalization has been taken as a determinant of institutional quality. Pre-multiplying above equation by B^{-1} on both sides to convert the system into VAR in standard form or reduced form VAR.

$$Y_t = A_0 + \sum_{i=1}^{p} A_1^i Y_{t-i} + \sum_{i=1}^{p} A_2^i Z_{t-i} + e_t \qquad [4.2]$$

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[69] From chapter 3, it can be seen that in IMF programme countries, determinants of institutional quality have an overall negative impact on MII. Moreover, Acemoglu *et al.* (2003) pointed out that the main reason behind macroeconomic instability and the varying levels of macroeconomic volatility among different countries were related more with institutional reasons than the traditionally identified macroeconomic determinants. Similarly, better budgetary institutions (which are important economic institutions) had a negatively significant impact on (budget) deficit (von Hagen, 1991). Note: for details on VAR and Structural VARs, see chapter 5, 'Multiequation time-series models' of Walter Enders (2015).

[70] I have employed ER in VAR model, but simulation analysis is based on ERV.

where,

$$A_0 = B^{-1}\gamma_0 \qquad\qquad\qquad\qquad [4.3]$$
$$A_1 = B^{-1}\gamma_1 \qquad\qquad\qquad\qquad [4.4]$$
$$A_2 = B^{-1}\gamma_2 \qquad\qquad\qquad\qquad [4.5]$$
$$e_t = B^{-1}\varepsilon_t \qquad\qquad\qquad\qquad [4.6]$$

It is important to note that reduced form residuals are related with the underlying structural shocks according to the final equation:

$$E(e_t e'_t) = E(B^{-1}\varepsilon_t)(B^{-1}\varepsilon_t)' \qquad\qquad\qquad [4.7]$$

A critical step in VAR analysis is selection of appropriate lag length, which is helpful in capturing true dynamics of the economy and in finding reliable results. Wrong specification of lag length results in unreliable estimates (Braun and Mittnik, 1993). More lags quickly consume degrees of freedom while selecting too few lags result in autocorrelated residuals (Lutkepohl, 1991). Moreover, as Hafer and Sheehan (1991) highlighted, forecast accuracy also depends on lag length. Two criteria that are frequently used in research studies are AIC (Akaike Information Criterion) and SC (Schwarz Information Criterion). The idea behind these criteria is that more lags reduce residual sum of squares (RSS), but consume more degrees of freedom. Both criteria compare benefit of reduction in RSS with the loss of degrees of freedom. If adding an additional lag reduces RSS more than the loss of loss of degrees of freedom, then that lag must be included in the VAR. The best model is where the value of either of these criteria is minimum.

After estimation of VAR in standard form, a researcher is required to put restrictions on coefficients to recover structural parameters from estimated reduced form residuals. There are $n(n-1)/2$ number of restrictions that need to be imposed to have an exactly identified system.

The VAR model in Eq. [4.1] has moving average representation, which can be found by recursive substitution method. The vector moving average form is given as:

$$X_t = \sum_{i=0}^{\infty} \theta_i \ \varepsilon_{t-i} \qquad\qquad\qquad\qquad\qquad\qquad [4.8]$$

where,

$$\theta = A^{-1}[I - \gamma_1]^{-1} \qquad\qquad\qquad\qquad\qquad\qquad [4.9]$$

or

$$Y_t = \bar{\theta}\gamma + \bar{\theta}e_t \qquad\qquad\qquad\qquad\qquad\qquad [4.10]$$

Where,

$$\bar{\theta} = [I - \gamma_1]^{-1} \qquad\qquad\qquad\qquad\qquad\qquad [4.11]$$

Structural shocks can be recovered from Eq. [4.1] by using structural parameters, after restricting some of the parameters.

I have put the restriction that institutional quality is causally prior to all other variables in the VAR. This assumption is justified as institutional quality affects macroeconomic variables, but the contemporaneous relationship is not true for the other way round. Within the sub-indices of macroeconomic instability index, exchange rate is assumed to be immediately affected by all variables, while fiscal indicators and inflation rate are adjusted in the last. Overall these assumptions are consistent with exchange rate overshooting model (Dornbusch, 1976), fiscal theory of exchange rate (Oge Guney, 2007) and the assumption of price rigidity in the economy.

4.4. Estimation and Results[71]

4.4.1. VAR and impulse response functions of sub-Indices of Macroeconomic Instability Index and KOF Index of Globalization

In the first step, pretesting of unit root in the variables is important. I have used Augmented Dickey-Fuller (ADF) procedure to test the presence of unit root. As expected, most of the variables are found to be unit root processes, as shown in table 4.1. Inflation rate and exchange rate variability are only stationary at level; the reason being that both variables are first differences of non-stationary variables, namely the inflation rate and exchange rate, respectively. However, none of the variables contain two unit roots so that all variables are stationary at first difference.

Table 4.1: Results of Augmented Dickey-Fuller Test

	Level			First Difference		
Variables	ADF	Critical Values	Probability	ADF	Critical Values	Probability
ER	2.968524	-3.699871	0.9999	-3.263094	-3.689194	0.0267
ERV	-5.692251	-3.639407	0.0000			
FD	-2.490783	-3.639407	0.1265	-7.795269	-3.646342	0.0000
INF	-3.210213	-3.646342	0.0283			
KOF	-0.802918	-3.639407	0.8055	-5.694326	-3.646326	0.0000
LRGDP	-2.853124	-3.646342	0.0619	-3.665772	-3.653730	0.0097
MII	-2.460716	-3.646342	0.1339	-8.503539	-3.653730	0.0000
PD	-2.756072	-3.646342	0.0757	-4.700672	-3.646342	0.0006
REER	-2.000458	-3.639407	0.2853	-5.624953	-3.646342	0.0000

When variables are non-stationary at level then they have long run trend or permanent component. In this case if variables are cointegrated then the system of equations should be modeled as vector error correction model (VECM), otherwise these variables VAR in first difference. The procedure, therefore, is to test the hypothesis of cointegration among the variables. I have employed Johansen's methodology to test cointegration among

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[71] Here, EViews 8 has been employed for estimation purposes (http://www.eviews.com/EViews8/ev8whatsnew.html).

variables that are to be combined in VAR model. In table 4.2, both the Trace test and Maximum Eigenvalue statistic show that there are six eigenvalues that are nonzero; this indicates that system as a whole is stationary. So it is not appropriate to model variables in VECM. I, therefore, employed VAR instead of VECM. The reason for not differencing the data is to avoid loss of important information contained in the variables (more detail is given in econometric methodology section).

In the next step six variables reduced form VAR has been estimated by OLS and using data in level form. Most of the variables in the model are supposed to be highly persistent, but as discussed in the methodology section, that VAR in level form can be used even if variables are unit root processes. The AIC is minimum at three lags, while SIC is minimum at first lag of the VAR. The likelihood ratio test also recommends one lag. So only one lag is included in the VAR model. (See Table A4.1 for details).

Table 4.2: Results of Johansen Cointegration Test

Series: ER FD INF KOF PD REER

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)**	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.
None *	0.910570	210.2054	103.8473	0.0000
At most 1 *	0.754857	135.3621	76.97277	0.0000
At most 2 *	0.677771	91.77874	54.07904	0.0000
At most 3 *	0.577992	56.67147	35.19275	0.0001
At most 4 *	0.424355	29.92679	20.26184	0.0017
At most 5 *	0.338414	12.80659	9.164546	0.0098

* indicates 1% level of significance.
** Cointegrating Equations (CE(s)).

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)**	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.
None *	0.910570	74.84337	40.95680	0.0000
At most 1 *	0.754857	43.58334	34.80587	0.0035
At most 2 *	0.677771	35.10727	28.58808	0.0063
At most 3 *	0.577992	26.74468	22.29962	0.0112
At most 4 *	0.424355	17.12020	15.89210	0.0320
At most 5 *	0.338414	12.80659	9.164546	0.0098

* indicates 1% level of significance.
** Cointegrating Equations (CE(s)).

Figure 4.1 VAR Simulations of KOF Index of Globalization on components of MII
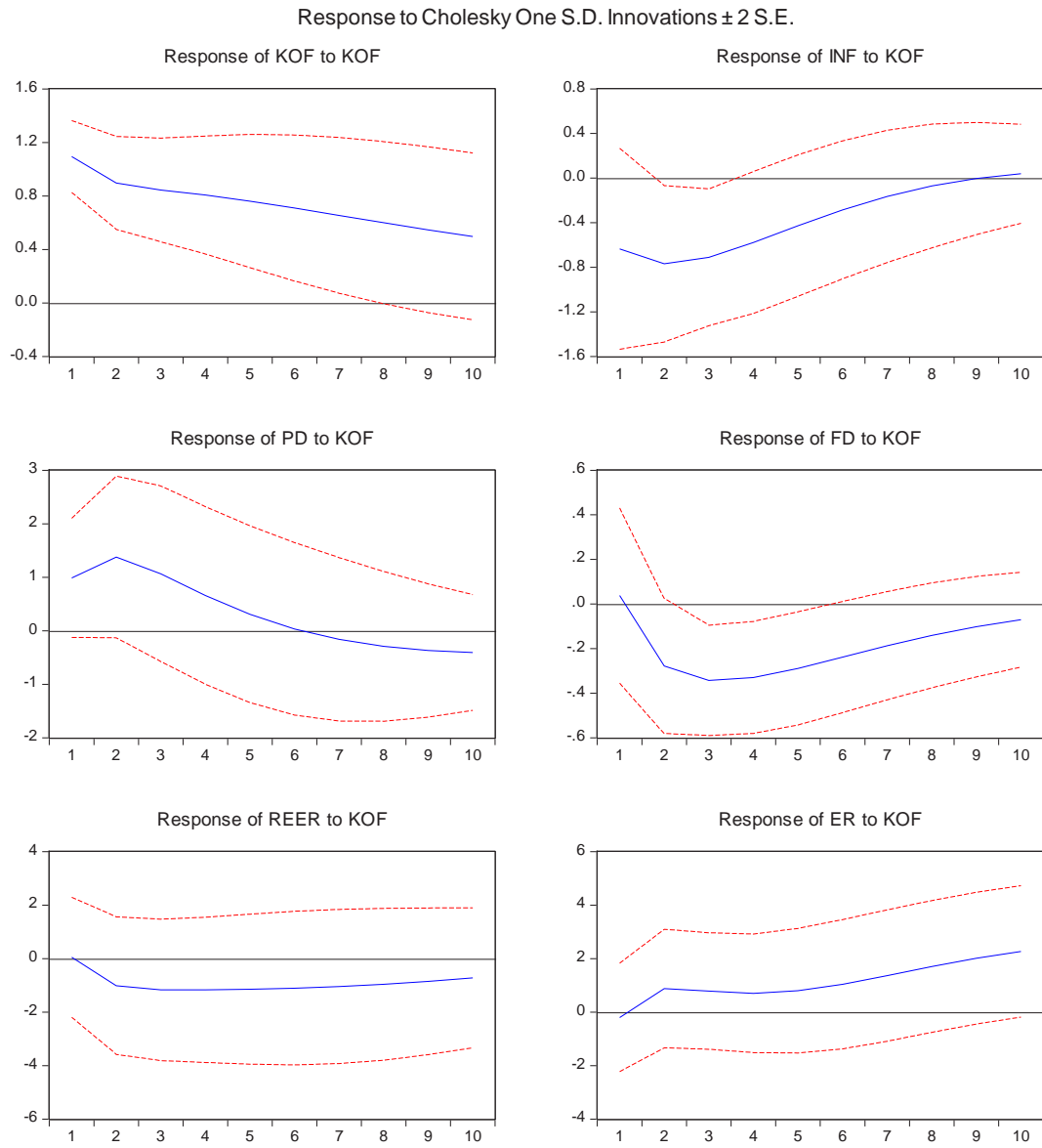
Response to Cholesky One S.D. Innovations ± 2 S.E.

Note: Blue line indicates impulse response function, while the two red lines are representative of +/- 2 standard error or 95% confidence interval.

Some diagnostic tests have been used to analyze behaviour of the residual series. The multivariate LM test is used and results (in Table A4.2) show that there is no autocorrelation in the residuals. This shows we have chosen the appropriate number of lags. Moreover, the residuals are found to be identically distributed, as shown from results of multivariate White test for

heteroskedasticity[72] (see Table A4.3). This indicates that our variables do not follow multivariate ARCH process, therefore, VAR model is appropriate for our analysis. Results of reduced form VAR are given in Table A4.4. Moreover, the above stated restrictions are imposed to recover structural shocks (results of structural parameters are given in Table A4.5). However, we have presented only impulse response functions here which show relationship among variables of the system.

The impulse response of KOF index of globalization (abbreviated as KOF) on itself highlights the presence of path dependence, and the persistence of the series. It is shown in figure 4.1 that the positive shock in KOF remains persistent for around 7 years. The series of KOF has long memory as the lagged effect remains significant for about 7 years.

In the case of inflation, the one standard deviation (SD) positive shock of KOF reduces inflation rate immediately. The impulse response further indicates that the shock impacts with a time lag of around one year. This effect reaches its peak (trough in the figure) in second year after the shock and the effect remains significant for two years after the shock. Although the negative effect remains there till seventh year but it becomes insignificant in fourth year. Similarly, the positive shock of KOF, negatively impacts fiscal deficit, with a time lag of around one year. The impulse response indicates that the impact is most profound for two to five years after shock and it becomes insignificant after six years. The impact of increase in KOF index on public debt is positive but it is statistically insignificant. The reason for this result is that KOF has effect on debt only through fiscal deficit. Hence, the effect of KOF on debt is insignificant after controlling for the effect of KOF index on fiscal deficit. Similarly, the impact on real effective exchange rate and nominal exchange rate is found to be statistically insignificant.

Despite insignificant effect of KOF index on some of the sub-indices of MII, further analysis has been conducted on all sub-indices of MII. It may be the case that individual effect of variables is insignificant but their joint

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[72] See White (1980) for details.

effect is significant. Therefore, we have estimated another VAR system in which effect of KOF on overall MII has been traced out.

4.4.2. *VAR and impulse response functions of Macroeconomic Instability Index, real GDP and KOF Index of Globalization*

For counterfactual simulation of growth rate of real GDP we have estimated three variables VAR comprising of log values of real GDP, MII and KOF index of globalization. The objective is to capture the direct and indirect relationship between KOF index and GDP. Results in figure 4.2 indicate that KOF index has persistent effect on itself and the effect dies out after five years. Interestingly, KOF index positively responds to GDP but MII does not affect institutional quality. Actually, log values of real GDP reflect both long term growth and short term deviations from trend path, whereas MII indicates only short term instability. Institutions are developed over the long run; that's why long run growth in GDP has significant effect on institutional quality.

Figure 4.2 Impulse response functions
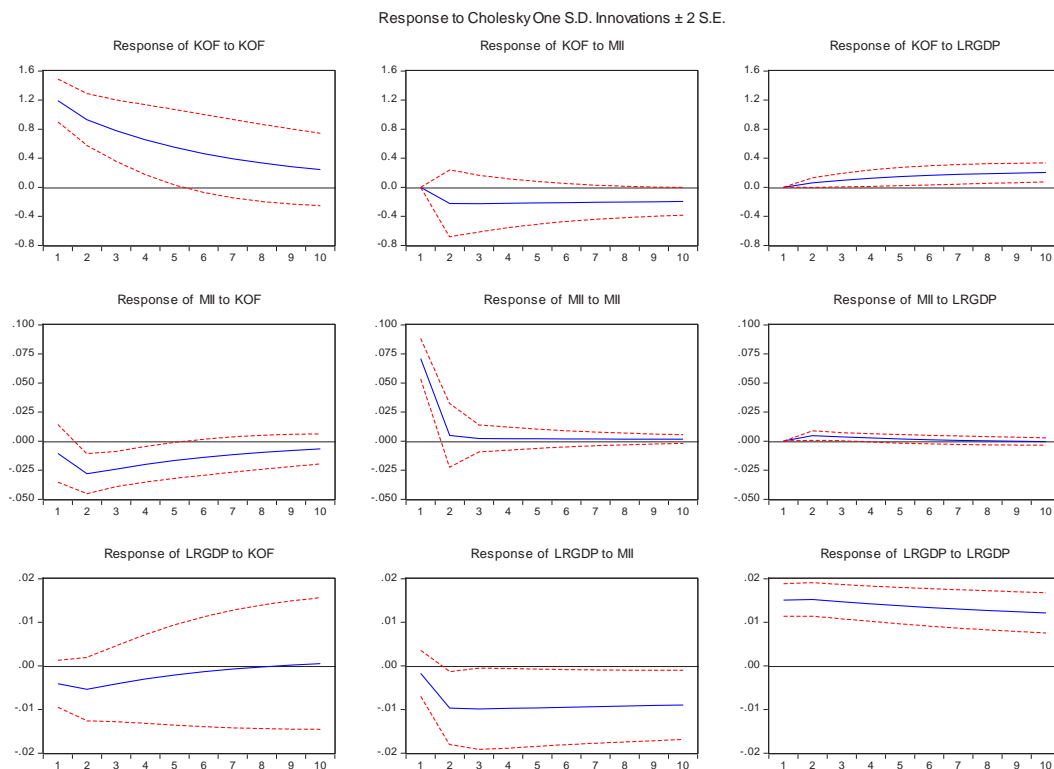
Note: Blue line indicates impulse response function, while the two red lines are representative of +/- 2 standard error or 95% confidence interval.

The MII negatively responds to KOF index; the effect is at its peak after one year but it gradually dies out to zero after five years. This result is consistent with that of the last section which indicates its robustness. The effect of MII on itself is positive but it has less inertia in that the effect is significant only for one year after the shock. The real GDP does not affect MII as the latter is only short run phenomenon, whereas the former is predominantly determined by the long run fundamentals.

Finally and more interestingly the direct effect of KOF index on GDP is found to be insignificant but MII does affect GDP even in the long run. This result validates our main hypothesis that institutional quality dampens macroeconomic instability, which provides enabling environment for achieving higher growth rate of real GDP. Moreover, this result justifies our suggestion that IMF can play an important role in the short term stabilization, as well as in the long run growth by making its loan/programme conditional on institutional quality.

4.4.3 Simulations

Counterfactual simulation results. As mentioned above the traditional approach of IMF focuses on stabilization and not on institutions. However, as found in second paper of this thesis, institutional quality has significant effect on macroeconomic instability, which in turn affects economic growth. This chapter, therefore, deals with counterfactual analysis by developing a hypothetical case in which IMF imposes conditionality of improving institutional quality (KOF index here) by a certain percentage and then the effects of this intervention, on macroeconomic variables, are estimated. Through these variables MII is constructed and average value of MII and its variance are compared with that of the actual data. The intervention is effective if it reduces MII compared to what has been found in actual data. The same is done for growth rate of real GDP.

Historical simulations. The economic system is assumed as described by VAR in the last section. In the simulation analysis data on all sub-indices of MII are supposed to be generated through estimated VAR and estimated shocks. However, for counterfactual analysis hypothetical cases are

assumed in which IMF imposes conditions to improve the index of KOF. For this three scenarios are assumed with respect to improvement in KOF index; low scenario corresponds to 5% improvement in KOF index, moderate scenario corresponds to 10% improvement, while high scenario corresponds to 15% improvement in KOF index. Results are given in table 4.3.

Results are in conformity with the hypothesis that intervention through institutional arrangement will reduce macroeconomic instability and increase GDP growth rate. In all the three hypothetical scenarios average value of MII is less than that found in actual data. And this effect increases with increase in the improvement in KOF index. The standard deviation also decreases with increase in KOF index but the relationship is opposite for 15% increase in KOF. The GDP growth rate also increases as institutional quality improves and the gain is quite significant. It may be pointed that the economy of Pakistan, on average, grew by 5% over the last five decades[73]. However, our results show that, this average growth rate could have been increased to above 5% by improving institutional quality. The IMF programs intend to stabilize the economy in the short run, which positively contributes to high growth in the long run. Our results show that this objective can be better achieved through intervention regarding institutional quality.

Table 4.3. Comparison of actual and historically simulated figures

	MII		Real GDP
	Average	Standard Deviation	Growth Rate
Actual	0.4425	0.1066	4.63
Low Scenario	0.4146	0.1030	5.08
Moderate Scenario	0.3952	0.1026	5.37
High Scenario	0.3836	0.1043	5.57

Stochastic Simulations. Although results of historical simulations are according to our hypothesis but these results are less reliable as these are

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[73] Calculation on the basis of various issues of Pakistan's Economic Survey (http://www.finance.gov.pk/).

based on only one time simulations in which historically observed shocks are assumed to be the only shocks that can disturb the system. However, shocks series follow random process and need not remain same in the future. Had we observed a different shock series, different simulation results would have been achieved. To check the robustness of the results we have conducted stochastic simulation analysis in which 10,000 different scenarios are built with respect to shocks to each of the series in the VAR model. As the actual probability density function of structural shocks is unknown, therefore, we have used bootstrap procedure to find reliability of our estimates. In 10,000 repetitions, average values of the parameters, along with the values of probability are indicated in table 4.4.

Table 4.4. Comparison of actual and stochastically simulated figures

	MII		Real GDP
	Average	Standard Deviation	Growth Rate
Actual	0.443	0.107	0.046
Low Scenario	0.436	0.103	0.050
P-value	(0.600)		(0.700)
Moderate Scenario	0.427	0.106	0.051
P-value	(0.680)		(0.790)
High Scenario	0.416	0.109	0.053
P-value	(0.720)		(0.890)

Results of stochastic simulation are broadly in conformity with those found in historical simulations. Average value and standard deviation of MII decrease and real GDP growth rate increases as we increase the KOF index value. However, the difference between actual and average value of MII is smaller compared to that in the case of historical simulation. But in case of growth rate results remain almost same. We also find the probability that increased KOF index by 5% will result in lower value of MII than the actual value is 0.60, and the probability of growth rate being higher than the actual one is 0.70. The corresponding probabilities for 10% increase in KOF index are 0.68 and 0.79, and for 15% increase are 0.72 and 0.89, respectively.

4.5. Conclusion

The objective of this paper was to estimate the effect of improvement in a significant determinant of institutional quality, on macroeconomic instability and economic growth, in the case of a prolonged user of IMF resources, Pakistan. For this purpose, VAR model has been estimated and counterfactual analysis has been done in both historical as well as stochastic simulation using bootstrap procedure. Results indicate that macroeconomic instability can be reduced and hence higher growth rate of GDP can be achieved through intervention regarding institutional quality. The IMF, therefore, can achieve its objectives of stabilization and economic growth by making its programmes dependent on institutional quality of the program country.

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Table A4.1. VAR Lag Order Selection Criteria

Endogenous variables: KOF INF PD FD REER ER

Exogenous variables: C

Sample: 1980 2014

Included observations: 31

Lag	LR	AIC	SC
0	NA	38.47708	38.75462
1	280.0967*	29.12896	31.07178*
2	36.78682	29.40783	33.01593
3	48.89836	27.65555*	32.92892

Table A4.2. VAR Residual Serial Correlation LM Tests

Null Hypothesis: no serial correlation at lag order h

Sample: 1980 2014

Included observations: 33

Lags	LM-Stat	Probability
1	38.88366	0.3411

Note: Probabilities from chi-square with 36 degrees of freedom.

Table A.4.3 VAR Residual Heteroskedasticity Tests

Cross Terms (only levels and squares)

Sample: 1980 2014

Included observations: 33

Joint test:

Chi-sq	Degrees of Freedom	Probability
276.4619	252	0.1388

Table A4.4. Reduced form VAR estimates

	KOF	INF	PD	FD	REER	ER
KOF(-1)	0.832827	-0.344534	0.410864	-0.196542	-0.729452	1.370356
	(0.10673)	(0.25628)	(0.31951)	(0.11007)	(0.62944)	(0.56841)
	[7.80299]	[-1.34437]	[1.28592]	[-1.78554]	[-1.15889]	[2.41086]
INF(-1)	0.083740	0.161666	0.058166	0.000356	0.337445	0.171875
	(0.06893)	(0.16552)	(0.20635)	(0.07109)	(0.40652)	(0.36711)
	[1.21481]	[0.97672]	[0.28187]	[0.00501]	[0.83008]	[0.46819]
PD(-1)	0.051135	-0.288177	0.909026	-0.073867	0.043610	-0.424193
	(0.03983)	(0.09564)	(0.11924)	(0.04108)	(0.23491)	(0.21213)
	[1.28375]	[-3.01305]	[7.62349]	[-1.79815]	[0.18565]	[-1.99969]
FD(-1)	-0.232726	0.064702	1.470691	0.370875	-1.542596	1.465871
	(0.19138)	(0.45953)	(0.57291)	(0.19737)	(1.12864)	(1.01921)
	[-1.21604]	[0.14080]	[2.56706]	[1.87905]	[-1.36677]	[1.43824]
REER(-1)	-0.016746	-0.127285	0.061975	-0.027921	0.846542	-0.03486
	(0.01507)	(0.03619)	(0.04512)	(0.01554)	(0.08888)	(0.08027)
	[-1.11105]	[-3.51712]	[1.37361]	[-1.79629]	[9.52403]	[-0.43430]
ER(-1)	0.011252	0.009456	-0.046351	0.011600	0.128253	0.735696
	(0.01655)	(0.03975)	(0.04956)	(0.01707)	(0.09763)	(0.08816)
	[0.67971]	[0.23789]	[-0.93529]	[0.67941]	[1.31367]	[8.34467]
C	6.296581	53.82670	-24.42592	19.19467	40.40490	-12.82334
	(6.93364)	(16.6488)	(20.7563)	(7.15078)	(40.8904)	(36.9258)
	[0.90812]	[3.23307]	[-1.17679]	[2.68428]	[0.98813]	[-0.34727]
R-squared	0.988513	0.547322	0.883402	0.630514	0.971136	0.986238
Adj. R-squared	0.985862	0.442857	0.856495	0.545248	0.964475	0.983062
Sum sq. residuals	31.12421	179.4484	278.9180	33.10408	1082.473	882.7434
S.E. equation	1.094114	2.627139	3.275304	1.128377	6.452410	5.826806
F-statistic	372.9071	5.239321	32.83143	7.394681	145.7962	310.5398
Log likelihood	-45.85936	-74.76574	-82.04274	-46.87693	-104.4182	-101.0527
Akaike AIC	3.203598	4.955500	5.396530	3.265269	6.752616	6.548647
Schwarz SC	3.521039	5.272941	5.713971	3.582710	7.070057	6.866088
Mean dependent	40.99879	8.117518	63.97838	6.152457	121.3252	70.18091
S.D. dependent	9.201787	3.519654	8.646054	1.673274	34.23384	44.77123

Determinant residual covariance (d.o.f. adj.)	43745.19
Determinant residual covariance	10463.74
Log likelihood	-433.6684
Akaike information criterion	28.82839
Schwarz criterion	30.73303

Table A4.5. Structural VAR estimates

Model: Ae = Bu where E[uu']=I

Restriction Type: short-run text form

@e1 = C(1)*@u1

@e2 = C(2)*@e1 + C(3)*@u2

@e3 = C(4)*@e1 + C(5)*@e2 + C(6)*@u3

@e4 = C(7)*@e1 + C(8)*@e2 + C(9)*@e3 + C(10)*@u4

@e5 = C(11)*@e1 + C(12)*@e2 + C(13)*@e3 + C(14)*@e4 + C(15)*@u5

@e6 = C(16)*@e1 + C(17)*@e2 + C(18)*@e3 + C(19)*@e4 + C(20)*@e5 + C(21)*@u6

where

@e1 represents KOF residuals

@e2 represents INF residuals

@e3 represents PD residuals

@e4 represents FD residuals

@e5 represents REER residuals

@e6 represents ER residuals

	Coefficient	Std. Error	z-Statistic	Prob.	
C(2)	-0.580125	0.405605	-1.430271	0.1526	
C(4)	0.738795	0.498194	1.482948	0.1381	
C(5)	-0.28273	0.207481	-1.362682	0.1730	
C(7)	-0.134006	0.162886	-0.8227	0.4107	
C(8)	0.004184	0.067506	0.061978	0.9506	
C(9)	0.189271	0.055108	3.434514	0.0006	
C(11)	1.136556	0.942127	1.206372	0.2277	
C(12)	0.316773	0.386531	0.819528	0.4125	
C(13)	-1.014007	0.367620	-2.758303	0.0058	
C(14)	0.149785	0.996693	0.150281	0.8805	
C(16)	0.091603	0.814270	0.112497	0.9104	
C(17)	0.389208	0.330253	1.178516	0.2386	
C(18)	-0.153706	0.344935	-0.445608	0.6559	
C(19)	2.836657	0.843330	3.363638	0.0008	
C(20)	-0.218868	0.147242	-1.486458	0.1372	
C(1)	1.094114	0.134676	8.124038	0.0000	
C(3)	2.549311	0.313799	8.124038	0.0000	
C(6)	3.038486	0.374012	8.124038	0.0000	
C(10)	0.961906	0.118402	8.124038	0.0000	
C(15)	5.507458	0.677921	8.124038	0.0000	
C(21)	4.658421	0.573412	8.124038	0.0000	
Log likelihood	-457.2711				

Estimated A matrix:

1.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0.580125	1.000000	0.000000	0.000000	0.000000	0.000000
-0.738795	0.282730	1.000000	0.000000	0.000000	0.000000
0.134006	-0.004184	-0.189271	1.000000	0.000000	0.000000
-1.136556	-0.316773	1.014007	-0.149785	1.000000	0.000000
-0.091603	-0.389208	0.153706	-2.836657	0.218868	1.000000

Estimated B matrix:

1.094114	0.000000	0.000000	0.000000	0.000000	0.000000
0.000000	2.549311	0.000000	0.000000	0.000000	0.000000
0.000000	0.000000	3.038486	0.000000	0.000000	0.000000
0.000000	0.000000	0.000000	0.961906	0.000000	0.000000
0.000000	0.000000	0.000000	0.000000	5.507458	0.000000
0.000000	0.000000	0.000000	0.000000	0.000000	4.658421

Chapter 5

Concluding remarks

The thesis is an attempt to explore the importance of determinants of institutional quality on both macroeconomic stability and real economic growth in primarily IMF programme countries.

The changing role of IMF– one from mainly maintaining the par-value system in member countries to provider of financial resources to ever increasing countries after the Third World debt crisis– not only enhanced the scope of its activities, but the conditionalities that were imposed had a telling bearing on the economic performance of recipient countries. Together with this, increased the amount of research that started to gauge the performance of these programmes in terms of putting in place an environment that supported sustained macroeconomic stability and real economic growth. Research literature, applying different counterfactual methodologies, pointed towards below par performance of the Fund on both these counts. Hence, overall macroeconomic stability could not be achieved in programme countries on sustained basis (Evrensel, 2002; Easterly, 2005), with no significant consequence of IMF programmes for either investment or inflation. Also, no positive consequence on economic growth in recipient countries could be found (Barro and Lee, 2005). At the same time, may countries (including Pakistan) became prolonged users of IMF resources.

Similar consequences raised alarm among many researchers on the underlying neo-classical/monetarist behavioural assumptions of IMF programmes, who found them as too rigid, and not context-specific. The main problem was that IMF, as against the demand side of the economy, did not put adequate emphasis on the supply side. Even when it did internalize this criticism to some extent, the behavioural underpinnings of its programmes did not allow it to understand the due importance of institutions for macroeconomic stability and economic growth.

On the other hand, New Institutional Economics, saw economic agents which had bounded rationality, and were faced with transaction costs in a world of asymmetric information. Hence, they saw improvement in institutional quality as important for reducing costs faced by agents in the economy, and in turn overall had a positive impact on economic growth (Rodrik *et al.*, 2002; Hall and Jones, 1999). A closer look indicated that institutions evolved such governance structures that resulted in reduced transaction costs (Groenewegen *et al.*, 2010). According to NIE literature, both political- and economic institutions existed, where one influenced the other to bring overall change in institutional quality (Acemoglu, 2006; Acemoglu and Robinson, 2008; Acemoglu and Robinson, 2012). The current study is therefore motivated by this 'missing link of institutions' in IMF programmes.

The framework of NIE gives importance to both the political and economic determinants of institutional quality. In chapter 2, important determinants of institutional quality are researched in literature. Thereafter, that are tested for significance as important determinants of institutional quality. The scope of the study is primarily on the IMF programme countries, while a special analysis is also extended to see which determinants are particularly significant in the case of prolonged users. Among the various proxy variables for political- and economic institutional quality (PIQ and EIQ), respectively, the ones employed are Economic Freedom Index (EFI) of the Cato Institute[74] for EIQ, and Polity II (from the Polity IV dataset of Marshall *et al.*, 2011), which captures 'political structures and regime change'[75] for PIQ.

Selection of time period was important, and it was appropriate to select the starting point around the time of the Third World debt crisis, because it was then that the quantity and country coverage of IMF programmes substantially increased. Moreover, in order to make proper identification of prolonged users, it was important to have ten years of time periods. Hence,

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[74] http://www.cato.org/economic-freedom-world
[75] http://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/9263?q=Polity IIandsearchSource=icpsr-landing

to achieve reliable results, 1980-2009 (30 years) was selected as appropriate time period.

A number of institutional determinants were identified from literature as potentially important institutional determinants, that covered both the political/governance related sphere and also economic dimension. The variables on the political side included, type of regime indicating the presence of either presidential or parliamentary form of government, chief executive a military officer or not, the strength of government and opposition in parliament (indicated by Herfindahl Indices) respectively, quality of overall governance indicator, and extent of civil liberties. On the economic side extent of openness (indicated KOF Index of Globalization, taken as a proxy variable), measures of monetary-, fiscal-, and investment freedom, and real GDP were taken.

A panel of 129 IMF programme countries were taken, and by applying the System GMM approach, results indicated that the dynamic process is highly persistent for both economic- and political institutional quality, highlighting the aspect of path dependent nature of evolution of institutional quality. Estimation results indicated that, a parliamentary form of government, level of aggregate governance, extent of civil liberties, level of openness, and property rights all have a positive impact on overall institutional quality. Separately both monetary- and investment freedom enhance political institutional quality; while economic growth holds positively impacts economic institutional quality. Moreover, military in reduces political institutional quality. Hence, it could be seen that institutional determinants matter in the way political and economy institutions evolve in IMF programme countries. Also, improved institutional determinants help provide an environment for better policy implementation, something important for execution of IMF programme and its successful completion.

Chapter 3 started with identifying the criticism of IMF programmes in literature, which called for a rethinking of IMF programmes in terms of its behaviourial assumptions, and the rigid and one-size-fits-all kind of approach. With this context serving as a motivation, significant institutional determinants (from the previous chapter) are then tested- using a panel of

IMF programme countries (in terms of prolonged and non-prolonged users), and by applying once again the System GMM approach- on real economic growth, to see in turn their impact for time duration of 1980-2009. Subsequently, the estimated impact of institutional determinants (both political and economic) was found to be overall significant for enhancing real economic growth, both for prolonged- and non-prolonged users of IMF.

Along with looking at the direct impact of institutional determinants on real economic growth, their impact was also checked on macroeconomic instability. Moreover, here the indirect impact of institutional determinants on real economic growth was also seen through the channel of macroeconomic stability. Results indicated that in fact such a relationship did exist, whereby institutional determinants positively impacted real GDP both directly, as well as indirectly, through the channel of macroeconomic stability. As an extension, similar results were obtained for non-programme countries, in terms of both the direct and indirect impact of institutional determinants on real economic growth.

In chapter 4, prolonged users were focused on with the underlying motivation to explore the importance of institutional quality determinants for both macroeconomic stability and real economic growth. Pakistan was selected among the prolonged users as a representative case study, since after having been in many IMF programmes since the 1980s (been a prolonged user in both the decades of 1990s and 2000s), it had not been able to achieve either sustained macroeconomic stabilization or real economic growth. For meeting the technical requirement of VAR analysis technique, the time duration was expanded by taking a period of 1980-2014, while the institutional quality determinant that was suited for analytical purpose (under this technique) was chosen to be KOF index of globalization.

Here, time series data of Pakistan was backcasted with the underlying question to see the impact of enhanced institutional focus on macroeconomic instability and economic growth. For analysis VAR (Vector Autoregression) was constructed using all sub-indices of MII and indices of institutional quality – KOF index of globalization. Thereafter,

appropriate restrictions were imposed on contemporaneous relationship of variables to make VAR identified and for recovering structural shocks; which were then used to trace out the effect of KOF index of globalization on sub-indices of MII, and real economic growth, respectively. Thereafter, counterfactual simulations were conducted, assuming a hypothetical situation in which IMF programme has an institutional focus, whereby a low, moderate, and a high scenario was taken in terms of 5, 10, and enhancement in in KOF index of globalization. The thought process behind this was to see how gradual improvement in institutional quality impacted macroeconomic instability and real economic growth.

Results indicated that intervention through institutional arrangement reduced macroeconomic instability and increase GDP growth rate. In all the three hypothetical scenarios average value of MII was less than that found in actual data; while this effect increased with increasing improvement in KOF index. It was pointed that through enhanced institutional focus by IMF programmes, Pakistan's economy could have grown more that its average economic growth of 5% during the last five decades.

It is therefore being advised that IMF programmes put greater focus on institutional quality determinants so that it can perform better in terms of its objectives of achieving sustained macroeconomic stability and economic growth, both for the programme countries in general, and prolonged users in particular.

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108

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