

Alali, Walid Y.

Working Paper

Institutions, Policies, and Economic Growth Overview

Suggested Citation: Alali, Walid Y. (2010) : Institutions, Policies, and Economic Growth Overview, Universitätsbibliothek, Ludwig-Maximilians-Universität, München, <https://mpira.ub.uni-muenchen.de/115609/>

This Version is available at:

<https://hdl.handle.net/10419/269877>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Institutions, Policies, and Economic Growth

Overview[‡]

Walid Y. Alali^{‡‡}

*University College London, Department of Economics, Drayton House, 30 Gordon Street,
London, WC1H 0AX, United Kingdom*

December 2010

Economic growth is perhaps one of the most important subjects in the field of economic development. This paper overview the links between institutions, economic growth, and policy settings in developing countries based on cross-country (Asia, Latin America, and Africa), for the last two decades. It has also been shown that many policy effects act not only 'directly' on growth but also indirectly through the mobilization of resources for fixed investment. Sustained high growth rates are usually regarded as the main driver of improving the general welfare and income of a country. Neoclassical growth models, like Solow (1956), have put great emphasis on the role of physical capital accumulation. Modern economic growth theories have been extended to consider innovations, technology, human capital as well as institutions the fundamental causes of growth.

Key Words: Economic Development, Institutions, Institutions Performance, Policy, Economic Growth,

[‡] A series of five papers contrived from my MPhil thesis entitled "Essay on Institutions, Policies, and Economic Development" was constructed of six chapters at University College London (UCL). The first paper is an overview, and the other four papers are empirical studies looking at the effects of institutions on economic growth across the country. The first paper, entitled "Institutions, Policies, and Economic Growth Overview", reviews the relationship between institutions and policy regulation with development from the perspective of economic literature. The second paper, entitled "Impact of Institutions and Policy on Economic Growth: Empirical Evidence", empirical analysis to explore the interaction between the institution and economic growth. The third paper, entitled "Role of Political Institutions on Economic Growth: Empirical Evidence", is an empirical analysis to explore the effect of political institutions on development. The fourth paper, entitled "Impact of Natural Environment, Regional Integration, and Policies on FDI", explores the effects of three determinants of bilateral FDI, including natural barriers, the "at-the-border" barrier (regional trade agreement), and the "behind-the-border" barrier (domestic regulatory environment). The fifth paper, entitled "Cross Countries Economic Performances - SPF Approach", explores the differences in technical inefficiency (inefficient allocation of production inputs) and explains the diverse cross-country economic performances, using estimating a "global" stochastic production frontier (SPF) mod.

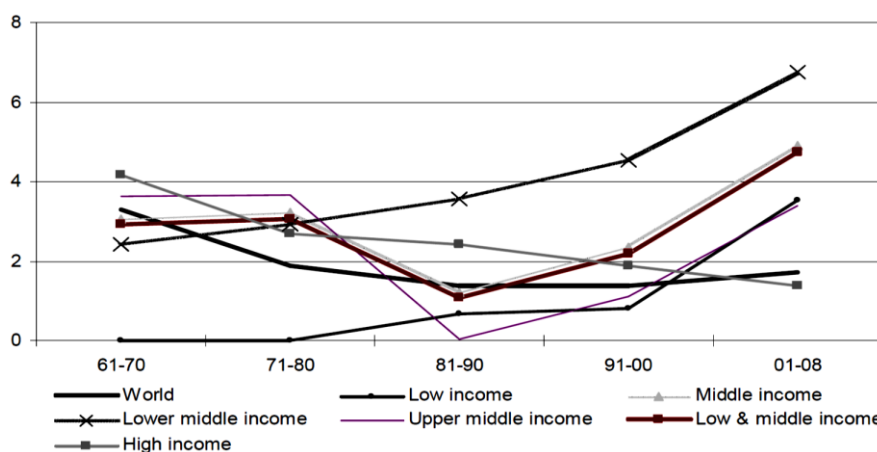
^{‡‡} I would like to express my sincere gratitude to my supervisor Professor Orazio Attanasio, who has been very resourceful in supporting and guiding me throughout my MSc study. Also my deepest thanks to Professor Sir Richard Blundell, for his valuable suggestions, comments, and guidance.

1 Introduction

Economic growth is perhaps one of the most important subjects in the field of economic development. Sustained high growth rates are usually regarded as the main driver of improving the general welfare and income of a country. Neoclassical growth models, like Solow (1956), have put great emphasis on the role of physical capital accumulation. Modern economic growth theories have been extended to consider innovations, technology, human capital as well as institutions as the fundamental causes of growth.

Reviewing the recent global development, we saw the most rapid growth around the world in the past 30 years. The rate of global integration, via trade and foreign direct investment, is unprecedented. This in turn has facilitated technology flow. Total world trade as a percentage of GDP rose from 26.7% in 1970 to 54.2% in 2005. At the same time nevertheless, the income gaps between the rich and the poor economies are also increasing. The headcount number of poverty has just lately reached a new peak of over 1.3 billion¹. The development experiences are quite diverse across regions.

Figure 1: Average Growth Rates of Real GDP Per Capita during 1961—2008 (%)



Source: World Development Indicators, World Bank. Growth rates are simple average.

Figure 1 shows that there has been a distinct acceleration of real GDP per capita growth since the 80s in most developing economies. Continuous economic growth should have naturally helped close the income gaps between developed and developing economies. However, this seemingly is not the case, especially for countries in Sub-Saharan Africa (see Figure 2).

¹ Source: Food and Agriculture Organisation of the United Nations (2009) (Retrieved from: http://www.fao.org/hunger/hunger_home/hunger_at_glance/en/)

Figure 2: GDP per capita (2005 constant price, PPP-adjusted) by Regions

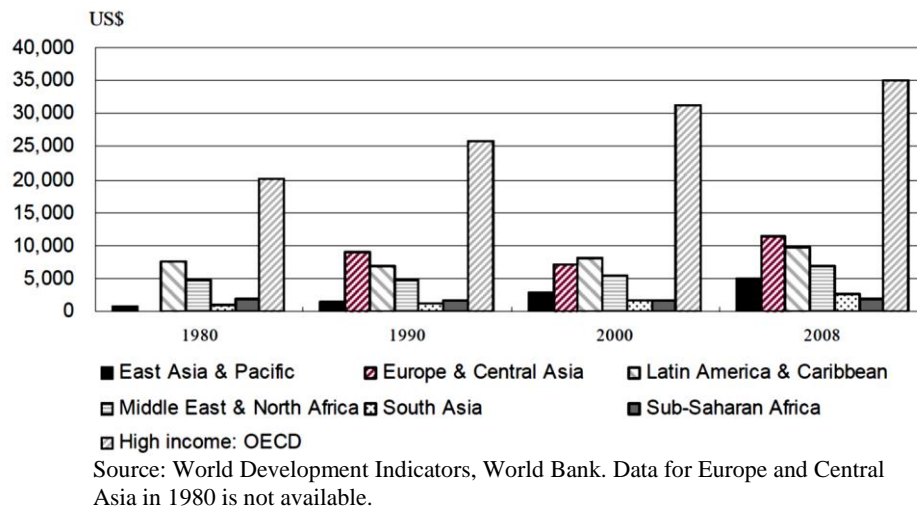


Table 1 shows the income gaps between developing economies and high-income OECD economies in selected years. It is noted that the average real GDP per capita (PPP-adjusted) of the high-income OECD countries was about 10 times that of those countries in the Sub-Saharan Africa region in 1980. However, the corresponding figure surged to 17 times in 2008.

Table 1: Income Gaps to High-income OECD Countries by Regions

Region/Year	1980	1990	2000	2008
East Asia & Pacific	24.59	17.56	10.46	5.97
Europe & Central Asia	..	1.87	3.37	2.05
Latin America & Caribbean	1.70	2.68	2.84	2.58
Middle East & North Africa	3.29	4.48	4.77	4.04
South Asia	22.17	20.47	17.98	12.88
Sub-Saharan Africa	10.24	14.98	19.11	17.06

Source: World Development Indicators, World Bank. .. Denotes that data is not available.

All these trigger the recent interest in studying the role of domestic institutions as the fundamental cause of such “great divergence”. The IMF (2005) also advises that to have considerable economic progress, development challenges have increasingly become how to improve the quality of the domestic institutional framework. It is because bad institutions will distort the usage of production inputs like labour and capital, and the adoption and utilisation of ideas from leading nations. Hence, understanding the channels through which institutions work on the development outcomes is essential in order to put forward any policy suggestions that would achieve the objectives of sustainable development.

2 Institutions Definition and Which Types of Institutions affect the Economic Development?

2.1 Definition

For the sake of discussion, we must first understand the meaning of institutions. In D. C. North's seminal work, North (1981) defines institutions as "the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. In consequence, they structure incentives in human exchange, whether political, social, or economic" (also see North (1990)). In other words, the possible choice set of an individual is defined and limited by institutions. Economic institutions in a very broad sense, such as the structure of property rights and the presence and perfection of markets, influence the structure of economic incentives in society. This structure will direct individuals on how resources are allocated and secure who gets the profits, revenues, and the residual rights of control. In a nutshell, societies with economic institutions that facilitate factor accumulation, innovation, and the efficient allocation of resources will prosper (also see Acemoglu, Johnson, and Robinson (2005)).

North further elaborates that institutions can be interpreted as informal constraints and formal rules. The informal constraints as "code of conduct, norms of behaviour, and conventions which come from socially transmitted information and are a part of the heritage that we call culture" (1990, P.36-37). That said, culture inherited in different societies may also significantly explain why the same formal rules have made diverse outcomes in various circumstances.

For the present series (which is composed of five papers, one is an overview and four empirical studies, which investigate the effects of institutions on cross-country economic development from different perspectives), our key interest is in formal rules nevertheless. "Formal rules include political (and judicial) rules, economic rules, and contracts. The hierarchy of such rules, from constitutions to statute and common laws, to a specific bylaw, and finally to individual contracts defines constraints, from general rules to particular specifications" (North 1990, P. 47)². It suggests, therefore, at least three principle aspects of institutions:

- i. Political rules (hereafter interpreted as political institutions),
- ii. Economic rules (hereafter referred as to economic institutions, which shape the property rights structures)
- iii. Contracts (between individuals and/or parties).

² More specifically, "political rules broadly define the hierarchical structure of the polity, its basic decision structure, and the explicit characteristics of agenda control. Economic rules define property rights as the bundle of rights over the use and the income to be derived from property and the ability to alienate an asset or a resource. Contracts contain the provisions, specific to a particular agreement in exchange".

2.2 Political and Economic Institutions Interrelationships

The IMF (2005) extends North's definition of the institution by stressing the interrelationship between economic and political institutions. The term political institution refers to institutions that shape the incentives of the political executive and determine the distribution of political power, which includes the ability to shape economic institutions and the distribution of resources. Economic institutions, by determining the relative affluence of various groups of society, also help shape political institutions. Good economic institutions are most likely to flourish in a "rent-free" environment, in which small groups are not able to take advantage of a monopoly position in a particular industry or activity, or privileged access to natural resources. More importantly, good economic institutions are also likely to be accompanied by good political institutions. If political power is broadly shared and subject to checks and balances, there is much less risk that those with political power will take advantage of their position to extract rents themselves.

Acemoglu, Johnson and Robinson (2005) provide a survey of recent work on the institution and economic growth in the Handbook of Economic Growth, which summarizes the approach adopted and key conclusions the subject obtained in the last decade or so. The literature developed so far, as they outlined, largely attempts to build a framework to explain why economic institutions differ across countries and how economic institutions determine political institutions. Models of such kind, studying the political economy of institutions, largely draw on historical experiences. In retrospect, economic institutions determine the incentives of and the constraints on economic actors and thus shape economic outcomes. Groups with de facto political power also strive for the distribution of economic institutions to affect the distribution of resources.

Despite these earlier works on institutions, there is a general impression that the literature usually does not present a coherent and systematic explanation of different measures of institutions. It is due to the fact, that despite all theoretical propositions and empirical evidence, there is not a strong conclusion about exactly "what" institutions matter to economic growth. One pertinent reason certainly is the lack of an operational framework and the measure of "institution". As Acemoglu (2009) also points out, the notion of institutions used in most of the literature is rather broad. There is so far little work on unbundling the broad cluster of institutions to understand what specific types of institutions might be important for economic outcomes.

2.3 Institutions Taxonomy

To be capable to proceed with empirical tests more systematically henceforth, we propose to adopt a conceptual framework designed by Rodrik (2005) and later adopted by Bhattacharyya (2009)³. Rodrik (2005) identifies “good institutions” as those that deliver the first-order economic principles – i.e. protection of property rights, contract enforcement, market-based competition, appropriate incentives, sound money, and debt sustainability – effectively. Without overseeing the inter-relationship between economic and political institutions, Rodrik (2005) also shares the view that a political entity is also needed to be strong enough to establish property rights and enforce contracts for its own purpose. The interplay between political institutions and economic institutions represents a “right balance between disorder and dictatorship” and thus should be considered together.

On this basis, he suggests a taxonomy of “market-sustaining institutions”. These institutional arrangements are believed to help achieve cross-country economic convergence with the level of development in the developed world. The components of market-sustaining institutions are shown in Table 2. His taxonomy can be understood in 4 dimensions, namely “market-creating”, “market-regulating”, “market-stabilising” and “market-legitimising” institutions.

Table 2: A Taxonomy of Market-Sustaining Institutions

<ul style="list-style-type: none"> * Market-creating institutions o Property rights o Contract enforcement 	<ul style="list-style-type: none"> * Market-regulating institutions o Regulatory bodies o Other mechanisms for correcting market failures
<ul style="list-style-type: none"> * Market-stabilizing institutions o Monetary and fiscal institutions o Institutions of prudential regulation and supervision 	<ul style="list-style-type: none"> * Market-legitimizing institutions o Democracy o Social protection and social insurance

Source: Rodrik (2005)

In market-creating institutions, since Mises (1947) and Mises (1951), Hayek (1944) and Hayek (1945), Alchian (1950), Friedman (1962) and Kirzner (1973), the importance of the market process has been vastly emphasized. These pioneering works have highlighted the essence of economic institutions and their role in providing both the incentive and information in making

³ His work, nevertheless, emphasizes the direct partial impact of human capital on growth, instead of institutions.

the best use of available resources to market participants. Security of property rights and contract enforcement affect incentives, productive efforts, and the effectiveness of resources used. Without such security, the incentive structure of the economy will be seriously weakened.

Under Rodrik (2005)'s taxonomy, he is also of the view that markets require extensive regulations to minimize the abuse of market power, internalize externalities, deal with information asymmetries, establish product and safety standards, etc. (i.e. market-regulating institutions). Countries also need monetary, fiscal, and other arrangements to deal with business cycles (i.e. market-stabilising institutions). Finally, democratic governance, also reflected in Rodrik (2000)'s views, is reckoned as the market-legitimising institutions for the realization and security of market outcomes, say through social protection and social insurance. The role of the political process (political regime specifically) thus may not enter into the development process directly. It nevertheless could be understood as the institutional arrangement that provides the incentives for the market participants to realize the development outcomes after economic development is achieved⁴.

In overall terms, this classification characterises and creates synergy for economic and political institutions and policies. This thus allows us to bring both economic and political institutions together to be tested under a unified framework. In the present series of five papers, our understanding and clustering of institutions are by and large based on this taxonomy.

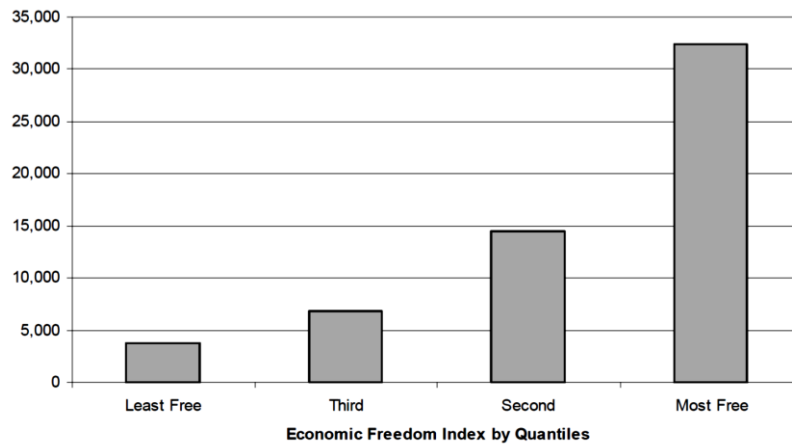
3 The institutions' Effects and Its Dynamics

3.1 The Quality of Institutional and the Development result

Indeed, when we take a snapshot of institutional quality and development outcomes, we do find a seemingly positive relationship. We consider the Fraser Institute's Economic Freedom Index as a proxy for the overall quality of the economic institution and four aspects of development as shown below – namely GDP per capita, GDP per capita growth, foreign direct investment (FDI) and gross capital formation. Figures 3, 4, 5 and 6 show that better quality of economic institution does associate with higher GDP per capita, average GDP per capita growth rate and FDI, yet to a less extent gross capital formation.

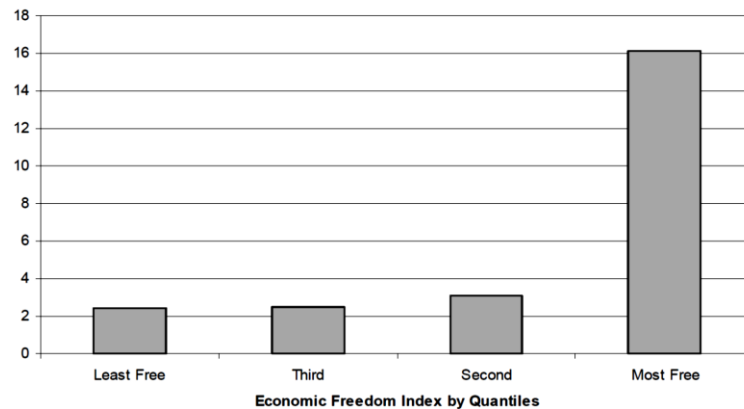
⁴The incentive-inducing property of democracy may help explain why political regime usually does not exhibit a direct impact on growth in the literature. Details are to be discussed in paper 2 "The Institutions and Politics' Impact on Economic Growth: Empirical Evidence".

Figure 3: Economic Freedom and PPP-adjusted Real GDP Per Capita (const 2005 dollar) in 2007



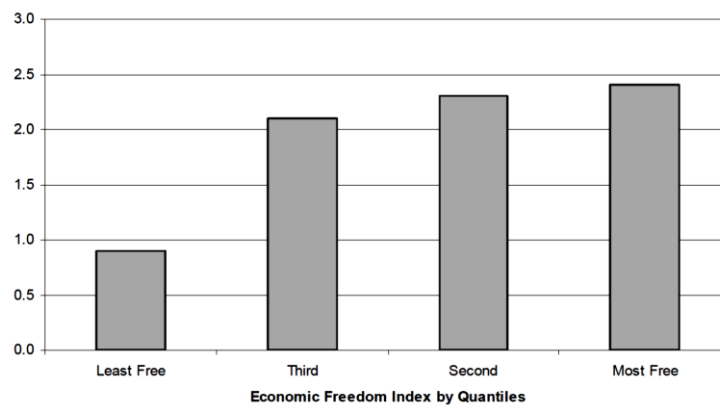
Sources: Economic Freedom of the World Report 2008, Fraser Institute.

Figure 4: Economic Freedom and Average Real GDP Per Capita Growth Rate during 1990-2007



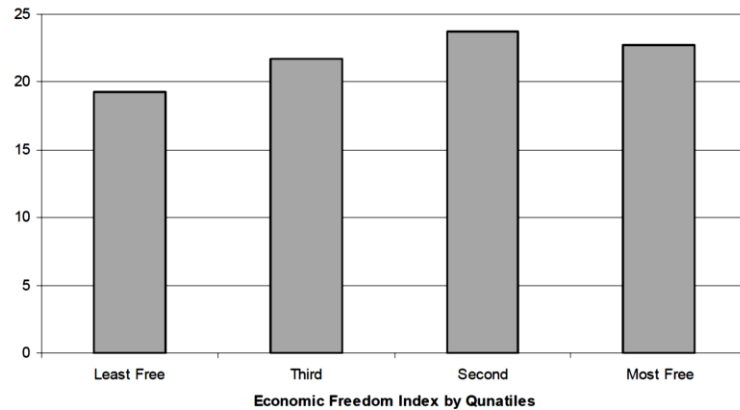
Sources: Economic Freedom of the World Report 2008, Fraser Institute.

Figure 5: Economic Freedom and Net Inflows of FDI as % of GDP During 1990-2007



Sources: Economic Freedom of the World Report 2008, Fraser Institute.

Figure 6: Economic Freedom and Gross Capital Formation During 1990 – 2007



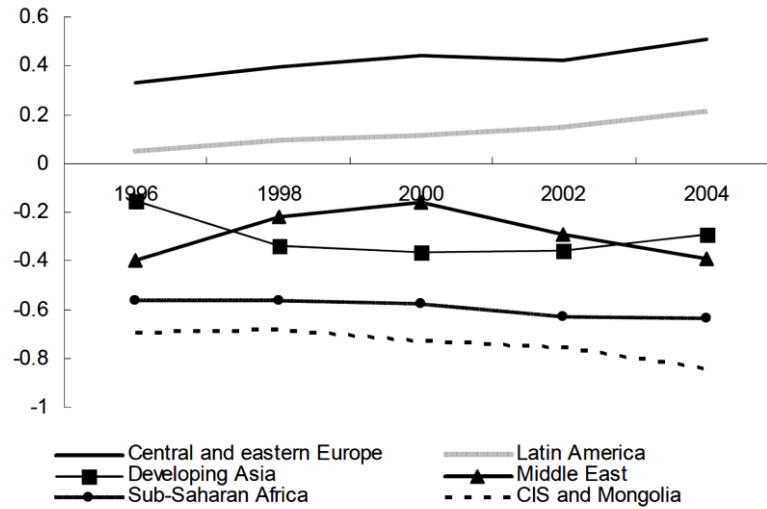
Sources: Economic Freedom of the World Report 2008, Fraser Institute.

3.2 The Transitions and Changes of the Institutions over Past Decades

These figures above suggest a positive correlation between institutional quality and development outcomes around the world. However, such correlation may not imply a straightforward causal relationship and possibly invite two further (and perhaps related) questions. Firstly, there might be some other factors affecting both institutions and economic development. Reverse causality is also possible since richer economies may have more resources to build up better institutions. Secondly, these snapshots ignore any institutional change over time. The IMF (2005) indeed has also concurred that rapid institutional change was possible in the past 30 years despite the tendency to institutional persistence.

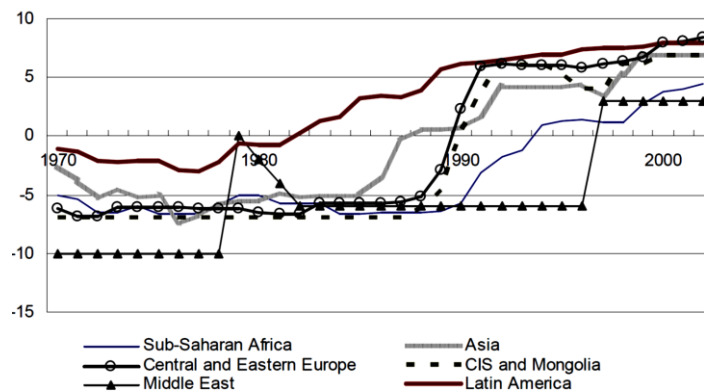
The regional plots of economic institutional quality from the World Bank's Governance Indicators – that we use to proxy economic institutions – and political institutions from the Polity IV data are presented below in Figure 7 and Figure 8. It is shown that institutional changes, in terms of both economic and political institutions, did take place over the last few decades. It is therefore worth pursuing a study to investigate if there are any interrelationships between these institutional changes with the global development scenarios that we observed earlier. The way to undertake this investigation more robustly is to perform some econometric analyses.

Figure 7: Economic Institutions (measured by Governance Indicators) by Regions (1996 – 2004)



Sources: IMF and Kaufmann, Kraay, and Mastruzzi (2005). Institutional quality is the World Bank's Governance Indicator, ranging from -2.5 to 2.5. Regional scores are average scores.

Figure 8: Political Institutions by Regions (1970 – 2003)



Source: IMF, Marshall and Jagers (2003). Scores are a regional average of the Polity index. Scores from 0 to 10 denote democracy, whereas 0 to -10 denote autocracy.

3.3 The institutions' Quantitative Measures

However, one of the major problems of undertaking empirical work using a quantitative measure of institutions is the lack of objective data for a sufficiently long period. For this study, we have considered a few data sources for measuring institutional quality and governance⁵. Not to mention the different aspects these variables are measuring, the period of these data also greatly limits the proper choices we can make. We summaries' the key features of selected data sources in Table 3 below.

⁵ For a complete review of governance/institutional indicators from different public and private sources, UNDP's (2007)'s publication can be referred to.

For example, data from the International Country Risk Guide (ICRG), one of the most frequently used data sources in the literature, only starts from 1984. The World Bank's Governance Indicators developed by Knack and Keefer (1995) on the other hand constitute different institutional measures such as the quality of the bureaucracy, property rights, and the political stability of a country to measure cross-country "governance", and are only available since 1998. Fraser Institute's Economic Freedom Index spans relatively longer, starting from 1970. The only exception perhaps is the Polity IV dataset for measuring political institutions, which covers measurements of several decades.

Fraser Institute's Economic Freedom Index is so far, to the best of our knowledge, the most comprehensive set of indicators measuring economic freedom and, to some extent, institutional quality in general with the longest time span. It also covers a reasonably large number of economies. Data can be traced back to as early as 1970, in a 5-year interval for the earlier years and annually from 2000 onwards. As such, we rely heavily on these indices to measure economic institutions in the second paper of the series titled "Impact of Institutions and Policy on Economic Growth: Empirical Evidence". The series is composed of five papers, one is an overview and four empirical studies, which investigate the effects of institutions on cross-country economic development from different perspectives

Table 3: Comparison of Selected Institutional Indicators

	Data	Time Span Frequency	Aspects Covered	No. of Economies Studied
<i>I. Political Institution</i>				
(1)	Polity IV – Political Regime and Authority Characteristics	Start from 1800 Annual	(1) Institutionalised democracy; (2) Institutionalised autocracy; (3) Regime durability	161
(2)	Freedom House – Annual Survey of Freedom	Start from 1955 Annual	(1) Political rights (including electoral processes, political participation and pluralism, functioning of government and discretionary questions) and (2) Civil liberties (freedom of expression and belief, associational and organisational rights, rule of law and personal autonomy and individual right)	192
<i>II. Economic Institution</i>				
(3)	Fraser Institute – Economic Freedom Index	Start from 1970 Annual since 2000	(1) Size of government; (2) Legal structure and security of property rights; (3) Access to sound money; (4) Freedom to trade internationally and (5) Regulation of credit, labour and business.	141
(4)	Heritage Foundation – Index of Economic Freedom	Start from 1994 Annual	(1) Trade policy; (2) Fiscal burden of government; (3) Government intervention in the economy; (4) Monetary policy; (5) Capital flows and foreign investment; (6) Banking and finance; (7) Wages and prices; (8) Property rights; (9) Regulation, and (10) Informal market activity.	161
(5)	ICRG – International Country Risk	Start from 1984 Annual	(1) Economic risk; (2) Political risk, and (3) Financial Risk	166
(6)	World Bank (WB) Governance Indicators	Start from 1996 Annual since 2002	(1) Voice and accountability; (2) Political stability and absence of violence; (3) Government effectiveness ; (4) Regulatory quality; (5) Rule of law, and (6) Control of corruption	213
(7)	WB Ease of Doing Business Report	Start from 2004 Annual	(1) Starting a business; (2) Dealing with construction permits; (3) Employing workers; (4) Registering property; (5) Getting credit; (6) Protecting investors; (7) Paying taxes; (8) Trading across borders; (9) Enforcing contracts, and (10) Closing a business	183

4 The Objectives of the Research

There is a broad agreement in academia that institutions play a fundamental role in economic development. Nevertheless, the question about which specific types of institutions actually relate to specific economic outcomes is not adequately addressed. Our primary research interest is to identify the channels through which development outcomes are affected by economic and political institutions directly.

During the course of doing so, we are aware that institutional changes did occur to various degrees across countries (see also IMF (2005)). Unlike previous studies that generally focus on cross-country long-term relationships, analysis in a dynamic setting is perhaps more relevant in this case. We also understand that economic and political institutions may take some time to change, and policies could be in place sooner instead. Rodrik's taxonomy allows us to estimate the effects of institutions and policies in a unified framework. Besides, how domestic institutions relate to the role of policy and government interventions, as well as external institutions also raise our genuine curiosity to proceed with this piece of work.

Against this background, our key research questions can be summarised as a series of related themes as follows:

- (a) Exactly what development outcomes are directly affected by institutional quality?
- (b) Are these development outcomes affected by economic or political institutions, macroeconomic policies or other economic fundamentals?
- (c) Given that institutional changes do occur, do economic and political institutions cause changes in macroeconomic policies? Similarly, do macroeconomic policies cause institutional changes?
- (d) Other than domestic institutions, do external institutions have any role to play in the development process?

With regard to development outcomes, we are interested in four specific aspects, namely economic growth, economic reforms, FDI and technical efficiency. With these in mind, hopefully, the results can identify the channels through which institutions have direct effects on economic development. It may also help shed some light on any policy implications and help address the question of how better institutions can be built. One main characteristic of our analysis, which distinguishes ours from the previous ones surrounding this subject, is the use of panel data. Partly reflecting data limitation, the existing literature is largely cross-sectional

in nature. Using panel data can help take into account cross-sectional heterogeneity and thus minimise the risk of obtaining biased results arising from omitted variables in the specifications. Panel data also gives us more information, less collinearity, more variability and more degree of freedom. In our case, the time dimension is important, which allows us to capture the effect of institutional changes. Using panel data can also let us study better the dynamics of adjustment. All in all, our contributions are intended to be entirely empirical.

5 The Organisation of the Dissertation

This is the first paper of the series which is composed of one review and four empirical studies, which investigate the effects of institutions on cross-country economic development from different perspectives. In the second paper of the series, entitled “Impact of Institutions and Policy on Economic Growth: Empirical Evidence”, we will revisit the empirical evidence of the effects of institutions on GDP per capita growth. Although the institution view literature largely suggests that institutions are the fundamental cause of growth, we find that the empirical evidences are rather inconclusive. It on one hand partly reflects that technical limitations – especially endogeneity – are not adequately tackled in these studies. On the other hand, there appears no consensus as to exactly what institutions cause growth as we mentioned earlier. Using Rodrik (2005)’s taxonomy aforementioned, we test the direct partial impact of these four clusters of institutions on growth using dynamic panel GMM estimation. The taxonomy provides a functional definition of institutions, allowing us to identify exactly what institutions matter to growth. At the same time, our methodology is technically improved without the need to look for “external” instruments to tackle the endogeneity problem. More importantly, we could estimate the effects of institutional change (i.e. the short-run effects of institutions) on growth, without assuming institutional persistence.

The third paper of the series, entitled “Role of Political Institutions on Economic Growth: Empirical Evidence” is a brief extension of the previous one, with a particular focus on the role of political institutions – i.e. democratic regimes. We investigate whether economic reforms are more likely to take place in democracies since greater accountability may lead the government to adopt measures that gain majority support. Economic reforms are referred to as comprehensive measures that broaden the scope of the market and the international market. Using the same methodology as in the second paper of this series, we study whether democracy causes economic reforms in different sectors, namely fiscal measures, trade liberalisation, credit market liberalisation, capital account openness and labour market deregulation. Reciprocally, we will also test if economic reforms cause the democratisation process.

In the fourth paper of the series, entitled “Impact of Natural Environment, Regional Integration, and Policies on FDI”, we will explore the determinants of FDI. Considering three sets of factors – natural barriers, “at-the-border” barrier (i.e. regional trade agreement), and “behind the border” barrier (i.e. domestic regulatory environment), we deploy an augmented gravity model to test if any one of these affects intra-OECD and inter-OECD bilateral FDI. The main aim is to study the impacts of external institutions vis-à-vis domestic institutions on one of the key aspects of global market extension – FDI.

In the fifth paper of the series, entitled “Cross Countries Economic Performances - SPF Approach”, our main objective is to explain the diverse economic performances across countries. We argue that different cross-country performances are the results of differences in technical inefficiency caused by the inefficient allocation of production inputs. We measure cross-country technical efficiency by means of estimating a stochastic production frontier. It represents a global production frontier, allowing us to estimate the best practice and segregate the effects of technical change and efficiency change for each country. We essentially intend to test the competing views of whether human capital, openness or institutions would explain such technical inefficiency.

6 Conclusion

In this series of five papers, we investigate the inter-relationships between institutions and development outcomes, more specifically, economic growth, economic reforms, FDI and technical efficiency. The fundamental question we are interested in is to identify the development outcomes and channels on which institutional quality has direct impacts. To this end, we use Rodrik's (2005)'s taxonomy to unbundle institutions into economic and political institutions, as well as macroeconomic policies. This largely follows the theoretical basis of earlier literature, arguing that these three aspects are endogenously determined. We then disentangle their individual effects on different development outcomes. Also, as an institution is probably not as persistent as one may have perceived, we explore the dynamic effect of institutions. Causality relationships between institutions and macroeconomic policies and reforms are also examined. Last but not least, other than domestic institutional quality, we also consider the impact of external institutions on development outcomes.

BIBLIOGRAPHY

- Acemoglu, D. 2006. "A Simple Model of Inefficient Institutions." *Scandinavian Journal of Economics*, 108:4, pp. 515-46.
- Acemoglu, D. 2009. *Introduction to Modern Economic Growth*. Cambridge, M.A.: Princeton University Press.
- Acemoglu, D., P. Aghion, and F. Zilibotti. 2006. "Distance to Frontier, Selection, and Economic Growth." *Journal of the European Economic Association*, 4:1, pp. 37-74.
- Acemoglu, D. and S. Johnson. 2005. "Unbundling Institutions." *Journal of Political Economy*, 113:5, pp. 949-95.
- Acemoglu, D., S. Johnson, and J. Robinson. 2001. "The Colonial Origins of Comparative Development: An Empirical Investigation." *American Economic Review*, 91:5, pp. 1369-401.
- Acemoglu, D., S. Johnson, and J. Robinson. 2002. "Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution." *Quarterly Journal of Economics*, 117:4, pp. 1231-94.
- Acemoglu, D., S. Johnson, and J. Robinson. 2003. "Disease and Development in Historical Perspective." *Journal of the European Economic Association*, 1:2-3, pp. 397-405.
- Acemoglu, D., S. Johnson, and J. Robinson. 2005. "Institutions as a Fundamental Cause of Long-Run Growth," in *Handbook of Economic Growth*. Philippe Aghion and Steve Durlauf eds. Amsterdam: Elsevier, pp. 385-472.
- Acemoglu, D., S. Johnson, J. Robinson, and P. Yared. 2008. "Income and Democracy." *American Economic Review*, 98:3 (Jun), pp. 808-42.
- Acemoglu, D. and J. Robinson. 2006. "De Facto Political Power and Institutional Persistence." *American Economic Review*, 96:2, pp. 325-30.
- Bhattacharyya, A., A. Bhattacharyya, and K. Mitra. 1997. "Decomposition of Technological Change and Factor Bias in Indian Power Sector: An Unbalanced Panel Data Approach." *Journal of Productivity Analysis*, 8, pp. 35-52.
- Bhattacharyya, S. 2009. "Unbundled Institutions, Human Capital and Growth." *Journal of Comparative Economics*, forthcoming.
- Friedman, M. 1962. *Capitalism and freedom*. Chicago: University of Chicago Press.
- IMF. 2005. "Chapter 3: Building Institutions," in *World Economic Outlook*. Washington D.C.: IMF.
- IMF. 2008. "Structural Reforms and Economic Performance in Advanced and Developing Countries." IMF Occasional Paper, forthcoming.
- Kaufmann, D. and A. Kraay. 2002. "Growth Without Governance." *World Bank Policy Research Working Paper*, No. 2928.
- Kaufmann, D., A. Kraay, and M. Mastruzzi. 2005. "Governance Matter IV: Governance Indicators for 1996 to 2004." *World Bank Policy Research Working Paper*, No. 3630.

- Kaufmann, D., A. Kraay, and P. Zoido-Lobato. 2002. "Governance Matters II: Updated Indicators for 2000/01." World Bank Policy Research Department Working Paper, No. 2772.
- Development and Economic Growth." *Carneige-Rochester Conference Series on Public Policy*, 40:Jun, pp. 259-92.
- Knack, S. and P. Keefer. 1995. "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures." *Economics & Politics*, 7:3, pp. 207-27.
- Knack, S. and P. Keefer. 1997. "Does Social Capital Have an Economic Payoff? A Cross-Country Investigation." *Quarterly Journal of Economics*, 112:4, pp. 1251-88.
- Maddison, A. 2001. *The World Economy: A Millennial Perspective*. Paris: OECD.
- Marshall, M. G. and K. Jagers. 2009. *Polity IV Project - Political Regime Characteristics and Transitions, 1800-2007: Centre for Systemic Peace*.
- Masters, W. A. and M. S. McMillan. 2001. "Climate and Scale in Economic Growth." *Journal of Economic Growth*, 6:3, pp. 167-86.
- North, D. C. 1981. *Structure and Change in Economic History*. New York: W. W. Norton & Co.
- North, D. C. 1990. *Institutions, Institutional Change and Economic Performance*. New York: Cambridge University Press.
- North, D. C. and R. P. Thomas. 1973. *The Rise of the Western World -- A New Economic History*. Cambridge: Cambridge University Press.
- Persson, T. 2005. "Forms of Democracy, Policy and Economic Development." NBER Working Paper, No. 11171.
- Petrin, A. and J. Sivadasan. 2006. "Job Security Does Affect Economic Efficiency : Theory, A New Statistic, and Evidence from Chile." NBER Working Paper, No. 12757.
- Pitlik, H. and S. Wirth. 2003. "Do Crises Promote the Extent of Economic Liberalization?: an Empirical Test." *European Journal of Political Economy*, 19:3, pp. 565-81.
- Rodrik, D. 1999. "Democracies Pay Higher Wages." *Quarterly Journal of Economics*, 114:3, pp. 707-38.
- Rodrik, D. 2000. "Institutions for High-Quality Growth: What They Are and How to Acquire Them." *Studies in Comparative International Development*, 35:3, pp. 3-31.
- Rodrik, D. 2005. "Growth Strategies," in *Handbook of Economic Growth*. Philippe Aghion and Steven Durlauf eds. Amsterdam: Elsevier, pp. 967-1014.
- Rodrik, D., A. Subramanian, and F. Trebbi. 2004. "Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development." *Journal of Economic Growth*, 9:2, pp. 131-65.
- Solow, R. M. 1956. "A Contribution to the Theory of Economic Growth." *The Quarterly Journal of Economics*, 70:1, pp. 65-94.
- Sullivan, M. J. 1991. *Measuring Global Values*. New York: Greenwood. Sunde, U., M. Cervellati, and

P. Fortunato. 2006. "Growth and Endogenous Political Institutions," in *Institutions, Development, and Economic Growth*. Theo S. Eicher and Cecilia Garcia-Penalosa eds. Cambridge, MA: The MIT Press, pp. 215-48.

UNDP. 2007. *Governance Indicators: A Users' Guide*. New York: UNDP. Vandenbussche, J., P. Aghion, and C. Meghir. 2006. "Growth, Distance to Frontier and Composition of Human Capital." *Journal of Economic Growth*, 11:2, pp. 97-127.

Wooldridge, J. M. 2000. *Introductory Econometrics: A Modern Approach*. New York: South-Western College Publishing.