

# INSTITUTIONS AS DETERMINANTS OF GROWTH

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## *Institutions as a Determinant of Economic Growth*

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### ***Abstract***

This paper looks into the question as to why economic growth takes place at different rates over time and across countries from an institutional perspective. It examines the important role of institutions, particularly political institutions, in shaping economic performance. It firstly examines the key theoretical and empirical studies on institutions and growth, and identifying the gap in the existing literature as the lack of understanding on how institutions affect growth. To address this gap, this paper introduces a theoretical model focusing on the characteristics of political institutions related to organisational structures and their impact on economic growth. In doing so, it investigates the mechanisms through which the growth effects of political institutions operate. Preliminary empirical testing results and further implications are discussed.

## Section I Introduction

*There are many economic puzzles, but there are only two really great mysteries. One of these mysteries is why economic growth takes place at different rates over time and across countries...The other mystery is the reason why there is a business cycle. (Paul Krugman, 1994: 25)*

Understanding the process of economic growth and explaining the vast differences in economic performance across countries have been the fundamental challenges of economics and socio-political science. Over the post-war era, the growth economists have established a body of theories and empirics that amassed substantial insights into the process of economic growth. These growth analyses can be broadly categorised into three waves of interest.<sup>1</sup>

The first wave was stimulated by Harrod (1939) and Domar (1946), and had a strong Keynesian flavour. They raised the issue of stability of the growth path by contrasting two growth rates. The second wave focused on the steady state growth rates exogenously determined by technological progress. Initiated by Solow (1956) and Swan (1956), the enriched neoclassical economic growth model inspired substantial theoretical and empirical research. Subsequently, after a two-decade hiatus, Romer (1986) and Lucas (1988) began the third wave of growth theory and developed endogenous economic growth models that explicitly recognise the role of knowledge, innovation and human capital. Despite the significant improvement in the understanding of the subject, the existing growth theories have not yet to provide a satisfactory explanation or prediction of a general phenomenon of the past decades: the great divergence in economic performance *within* the lower-income countries, whereas some grow with the highest pace, the underdeveloped economies as a whole fail to catch up. In recognition of such inadequacy, more recently, there has been a resurgence of interests in economic growth studies characterised by a shift of focus from capital and other productive factors towards the quality of institutions and policies (Olson 1996).

A number of extensive surveys on the recent development of economic growth literature can provide a backdrop for this study, including Solow (2000), Aghion and Howitt (1998), Kenny and Williams (2001), Temple (1999), Bosworth and Collins (2003) and Rogers (2003). The present study has two specific objectives. First, it intends to offer a partial overview of some of the main contributions both to, and of, the recent growth literature, reflecting the current focus on institution in the literature. Second, to address the gap in the existing literature, it proposes a potential mechanism, though which the impact of institutions on growth to operate.

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<sup>1</sup> Ruttan (1998) also looked at modern growth theory in three waves but with a different emphasis.

The organisation of the paper is as follows. Section II ties together the quest and accomplishments of theoretical and empirical economic growth literature into an overarching picture of the institutional causes of economic growth. The subsequent section introduces a theoretical approach that integrates political institutions into an economic growth model. Section IV highlights some preliminary empirical results testing the proceeding model before Section V provides a brief conclusion and discussion.

## **Section II Recent development in the growth literature**

### *2.1 From neoclassical models to endogenous growth models and the role of institutions*

Over the past few decades, poor countries on average fail to grow faster than *any* high-income country does, while the fastest growing economies are always a subset of the lower-income countries (Olson 1996). However, neither the neoclassical growth models nor the endogenous growth models have the ability to adequately address this phenomena. In contrast, a number of theoretical contributions, which examine the underlying assumptions of neoclassical approach, have pointed out important directions to for further inquiry. The focal point of the recent growth literature clearly has been the role of institutions and institutional change in economic growth and economic performance in general (see for example, Hodgson, 1988, 1994, 1998; Eggertsson, 1990; North, 1994, 1999; Olson 1982, 1996, 2000a, 2000b). The central argument is that the great differences in wealth of nations are due mainly to differences in the quality of their institutions and economic policies. The emergence of these studies partly corresponds to the growing conviction that satisfactory understanding of economic performance requires going beyond the lean logic of at least stripped down neoclassical theory (Nelson and Sampat 2001).

It is worth noting that in the growing literature, the meaning and implication of the term—“institutions” can vary considerably from author to author. There have been different typologies of the idea of “institutions”, where some are based on various levels of social analysis,<sup>2</sup> and some others are according to the analytical approaches of the

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<sup>2</sup> Williamson (1987, 1996) classifies institutions into four levels in social analysis: level one represents the embeddedness of institutions often associated with informal institutions, such as customs and traditions, ethics and social norms, religion and aspects of cognition. These institutions evolve at a 100 to 1000 years time frame. The second level of institutions refers to the basic institutional environment which evolves at a 10-100-year frequency. Institutions at this level include formal rules of the game, property rights and their allocation, constitutions and political systems, laws, courts, etc. The third level is institutions of governance which has a 1-10-year frequency. Contractual relations, corporate governance, organisational boundaries and internal organisation are all included in this level of institutions. The last level is of continuous frequency and mainly refers to resource allocation and employment. For example, market prices and quantities, firms as production sets, incentive alignment between and within organisations are the institutions of this level.

function and evolution of institutions.<sup>3</sup> Given the diversity of institutional theorising in economics as well as other social sciences, there is probably no correct answer to a question like “what is the definition of institutions”. However, it is useful and possible to have a general overview of the various notions of “institutions”.

The strands of the various conceptions can be summarised into two encompassing definitions. The first equals institutions to “the rules of the game”, whereas the second sees institutions primarily as “governing structures”. The former emphasizes that as rules institutions establish the baseline conditions for human interaction, and give certain predictability to what other parties will do in particular contexts. The body of writing following this definition is vast, and covers a variety of topics, from property rights (Demsetz 1967, Morris 1989, Svensson 1998), to the role of formal law (Cooter 1996, Laffont and Tirole 1989, McCubbins et al. 1987), and the impact of culture, norm and religion on human behaviour and individual decision-making (North 1991, 1994). In contrast, the second definition of institutions focuses on the organisation and the structure of the governance of economic activities. Coase (1937)<sup>4</sup> and other literature on institutions are concerned with questions such as what determines the boundaries of firms and what explains the ownership pattern of a firm and corporate culture (see for example, Williamson 1987, Kreps 1990). Moreover, in line with this definition, firms, organisations and designation of other kinds are commonly referred to as “institutions”, e.g., “financial institutions”, “labour market institutions”, etc.

The recent resurgence in studies on the role of institutions, on the one hand, is largely empirical in nature, and the main debate will be discussed subsequently. On the other hand, growing interest in institutions as a factor shaping economic performance is in a way reminiscent of Adam Smith’s arguments over two hundred years ago. He explained that the productivity of the economic system depends on the division of labour and specialization, but specialization is only possible if there is exchange. According to the theory of institutional economics, the so-called “exchange” of money, materials or services is not, as assumed by the classical and hedonistic economists, an exchange of physical products or material services, but is instead transfer of two ownerships. Ownership and its alienation are created solely by the institutions of sovereignty (Commons 1936). Therefore, institutions – notably property rights – are crucial determinants of market efficiency. It is institutions form the rules that induce customary behaviour patterns and reduce uncertainty (North 1991, 1994). As a result, countries with better institutions, more secure property rights, and less distortionary policies will invest

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<sup>3</sup> For example, Acemoglu (2002) categorises the conceptions of institutions into four views: Efficient view, Incidental view, Rent-seeking view and Costly view.

<sup>4</sup> It is commonly said that new institutional economics started with “The Nature of the Firm” (Coase, 1937) with its explicit introduction of transaction costs into economic analysis (Coase, 1998).

more in physical and human capital, and use these factors more efficiently to achieve a greater level of income.

In elucidating this point from a somewhat different perspective, North (1989) argued that the most fundamental source of change in long-run is learning by individuals and entrepreneurs of organizations. Specifically, the speed of economic change is a function of the dynamics of learning, but the rate of that change is a function of the expected payoffs for acquiring different kinds of knowledge. Similarly, argued by economic growth theorists, technological change is assumed to arise in large part because of intentional action taken by people who respond to market incentives (Romer 1990). The comparative experience with economic growth over the last few decades has also highlighted the importance of private initiative and incentives. Rodrik (2000) claimed that all instances of successful development are ultimately the collective results of individual decisions by entrepreneurs to invest in risky new ventures and try out new things.

An effective market economy requires at least an incentive structure that clearly defines and effectively enforces property rights so that individuals have incentives to save and invest. More fundamentally, the incentives for productive factor accumulation are hinged on the ability of individuals to appropriate the fruits of their efforts. An effective market economy also needs an environment that ensures individuals can best advance their interests by being as productive as possible and engaging in mutually beneficial trade; a legal framework that impartially enforces contracts and encourages invention through patents and copyrights or to facilitate risk sharing through insurance and hedging in futures markets. Rodrik and Subramanian (2003) emphasized that market-creating institutions, namely, those that protect property rights and ensure contracts enforcement often rely on a functioning legal system. Moreover, the important role of secure property rights is, to a large extent, necessary and complementary to other institution that create the favourable incentive structure for economic growth to take place (Rodrik 2000, World Bank 2002).

Consequently, how to design institutions which produce policies that provide good incentives for economic agents has become a central question of economics (Laffont and Martimort 2002). As numerous authors have argued, to the extent that effective intervention occurred, its foundation rested upon certain fundamental domestic and international political conditions.<sup>5</sup> Since it is through the political process that conflicting interests ultimately are aggregated into public-policy decisions, political institutions thus have fundamental impact on the ultimate economic performance. Recently, Acemoglu et

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<sup>5</sup> See, for example, Morris and Adelman (1989), Casey (1998), Kenny and Williams (2001) etc.

al. (2004) argued that political institutions determine the distribution of political power, which in turn forms economic institutions. Subsequently, economic institutions shape the incentives of key economic actors in society. Therefore, political institutions, similarly to the economic institutions, determine the constraints on and the incentives of the key actors in the political sphere (Acemoglu *et al.*, 2004).

In the past few decades, there has been a notable intellectual movement from supporting to challenging this somewhat efficient view of institutions. Among others, Douglass North has departed from his early position that the function of constitutions is seen as precisely to reduce the transaction costs of reaching voluntary agreements (North 1981) to his present belief that societies that possess relatively efficient institutions are very lucky (North 1994). Moreover, institutions are not necessarily the choice of the whole society but rather the choice of the groups that control the political power at the time. Consequently, the institutions chosen may not maximize the welfare of the society as a whole. North (1994) argued there is a persistent tension between the ownership structure which maximises rents to the ruler (and his group) and an efficient system that reduces transaction costs and encourages economic growth. Acemoglu (2002) also argued that there are strong empirical and theoretical grounds for believing inefficient policies and institutions are prevalent. In particular, there are commitment problems that prevent Coasian bargains from being efficient.

Whether a government is able to make credible commitment has much to do with the political institutional structure, or how power is shared in the government. One line of research suggests divided governments encourage political budget deficits and delay reaction to crisis (for example, Alesina, Perotti and Tavares 1998). Tsebelis (2002) argued that the number of veto players is positively correlated with higher deficits, because different veto players require significant portions of the budget. Moreover, more veto players lead to higher probability of inertia, and therefore countries with high levels of debt, for example, Italy, will continue to have high deficits. In contrast, another line of work stresses the importance of institutional arrangements that disperse power, thereby increasing stability and predictability as well as reducing the risk of arbitrary or capricious government action (Fiorina 1992, Hammond and Miller 1987 and Keefer 2004). This strand of literature focuses on the ability of a government to make credible commitment. Elster (1994) asserted that “to be effective, power must be divided.” Witold Henisz (2000a, 2000b) used a long time-series of data and found that growth rates and investment are higher when the political system is unable to change the rules of the economic game. Acemoglu (2002) also claimed that inefficient policies and institutions are chosen as the consequences of commitment problems, i.e., parties holding political power cannot make commitments to bind their future actions because there is no outside agency with the coercive capacity to enforce such arrangements. These two conflicting

theoretical arguments on the relationship between political institutional power concentration and governance quality lead to a paradox (MacIntyre 2003).

The underlying reason for this commitment vs. flexibility debate is because a government is often a double-edged sword. Government plays an important role in establishing pro-growth conditions. For example, in the absence of government, no one has any socially enforceable right and there will be no private property, contracts, corporations, or patents. However, just as the government is essential for the establishment and enforcement of individual rights, it is also the greatest threat to them. For instance, only government can expropriate property on a large scale. Clearly, the tension between the conflicting arguments on the role of government partly explains why the institutions needed for successful development are not more generally understood or more widely used. Some government intervention, through the implementation of government policies, can be conducive to economic growth, while other intervention can be inefficient and destructive to the extent that it may become a major obstacle that hinders economic growth from taking place.

As a result, there is an obvious dilemma between the necessity of governments comprising enough power to protect property rights on the one hand, and the possibility of using this power to confiscate the wealth of citizens on the other. Olson (2002) summarised a paradoxical hypothesis about the economic role of government that sustained economic development may require governments that are strong enough to last indefinitely, yet so limited and restrained that they do not use their overwhelming power to abrogate individual rights. Jones (1988) discussed the role of government with a retrospect of over a thousand years of history. He pointed out there was an “optimality band” of government intervention where “factor and commodity markets are freed and the government is neither too grasping nor too weak”. Weingast (1995), on the other hand, considered “market preserving federalism” is the instrument which can provide a resolution. Moreover, Bruce Ackerman (2000) also adopted an intermediate position in a thoughtful and thought-provoking article. He suggested the optimal institutional configuration is not one with many veto players, like the American system, or with few, as in the United Kingdom. Instead, he advocates the intermediate case of a parliamentary system with a senate that cannot veto all the time, and with the possibility of referendums that are called by one government and performed by another in order to diffuse the power of government to set the agenda.

## ***2.2 Recent advancement of the understanding on institutions in growth empirics***

The recent theme of the main debate in the empirical studies focuses on the relative importance of institutions as a fundamental determinant of growth. Among the candidates



for the fundamental driving force of growth, there are primarily three strands of established explanations for the persistent and uneven economic performance across countries and over time. Rodrik et al. (2002) labelled them the *geography* view, the *integration* view and the *institutions* view, respectively. At the centre of the current debate, it is the question of the relative importance of institutions as one of the driving forces underlying long-run economic growth. Before specific studies are discussed, it is worth mentioning that similar to the broad spectrum of institutional theories, the empirical literature also consists of diverging approaches that differ not only in the research questions pursued or the methodologies deployed, but also in their conceptions of institutions.

The resurgence of interest in looking at the economic impact of institutions is partly led by Acemoglu et al. (2001, 2003), Rodrik et al. (2002), and Easterly and Levine (2002). In their studies, institutions are found to be the most important factors affecting a country's income over time, while Rodrik et al. (2002) forcefully asserted that *institutions rule*. Drawing upon the work of Acemoglu et al. (2001) and Frankel and Romer (1999), Rodrik et al. (2002) used instruments for the two endogenous variables—institutions and integration, and found the quality of institutions (as measured by a composite indicator of a number of elements that capture the protection afforded to property rights as well as the strength of the rule of law) is the only positive and significant determinant of income levels. Furthermore, the role of geography in explaining cross-country patterns of income per capita operates predominantly or exclusively through the choice of institutions, and little direct effect on income. Trade, on the other hand, has a significant effect on institutional quality, but no direct positive effect on income.

Despite the evidence presented in the existing empirical studies is mixed, the above-mentioned conclusions stand in stark contrast to the conventional wisdom. The welfare gains from economic integration are widely established and the role of international trade as a driver of productivity change and income growth has been confirmed by various empirical studies (for example, Dollar 1992, Sachs and Warner 1995, Edwards 1998, Greenaway et al. 1998, Frankel and Romer 1999, Vamvakidis 2002, Collier and Gunning 1999 and Baldwin 2003). Connected with various theoretical bases, the empirical investigation of the growth effect of trade can also operate via different channels, such as investment (Levine and Renelt 1992), human capital accumulation and technology (Frankel and Romer 1999), as well as other potential mechanisms like quality of macroeconomic policy, government size and the extent of price distortion (Wacziarg 2001). More specifically, Coe and Helpman (1995) found the estimated rates of return on R&D are very high, both in terms of domestic output and international spillovers. Furthermore, the beneficial effects of foreign R&D on domestic productivity are stronger,

the more open an economy is to foreign trade with countries having high stocks of R&D capital.

The recent critique by Rodriguez and Rodrik (2001) on the relative importance of trade as a growth determinant is predominantly motivated by empirical investigations. They claimed that trade is a proxy for a myriad of other important policy variables. Rodrik (1998) also criticised Sachs and Warner (1995, 1997) measures, particularly on the account of Africa's participation in international trade. Contrary to the Sachs and Warner's claim that African economies are much more closed-up than other developing countries, Rodrik found that Africa's participation in international trade is normal for its non-policy characteristics.

The institutionalist view also challenges the traditional thought where geography has long been considered a fundamental determinant of economic development. More generally, in conspicuous contrast to the advocates of institutions, a large body of literature emphasizes the important role of geography in country economic development experiences. Fairly representative of this view is Jeffrey Sachs (Sachs 2003, Sachs and Warner 1997, 1995) who warns of the tendency to use institutions as a single-factor explanation of the complicated issue of economic development. He strongly vows that the role of geography and resource endowments in development should not be underestimated, namely, '*institutions matter, but not for everything*' (Sachs 2003).

### **Section III A growth model integrating political institutions**

#### ***3.1 Introduction***

In the established literature, some efforts have been made to integrate some institutional variables into growth models. For example, Torsten Persson and Guido Tabellini have developed a series of theoretical models linking economic performance with various political and institutional aspects, including political accountability (Persson et al. 1997), electoral systems (Persson and Tabellini 2000, Persson et al. 2003), size and scope of the government (Persson and Tabellini 1999), constitutions (Persson and Tabellini 2003, 2004) and corruption (Persson et al. 2001). In a recent book, Feng (2003) looked at general patterns of political regimes and economic growth in a cross-national setting. However, at an overall level, despite of a growing body of literature, institutions are yet to be fully incorporated into coherent modelling frameworks of determinants of economic performance. Clearly, there is a gap between the proliferated statistical evidence and the partial theoretical understanding of the drivers of economic growth, particularly the relative importance of them and the mechanisms through which these factors operate. This section introduces a simple economic growth model that incorporates political institutions.

While most of the existing political economic models (Persson and Tabellini 2000, for example) are devoted to studying the various characteristics of fully competitive democracies, a large and important part of the world consists of partially democratic and non-democratic systems. Few studies have examined the role of political institutional structures with the capacity of covering all degrees of power concentration. Instead of focusing on detailed features of various types of democratic systems, the following model focuses on the aggregate characteristics of political institutions. In doing so, the whole spectrum of political institutional structures can be taken into consideration—from the extremely concentrated power-sharing arrangements to the extremely fragmented ones. The cases of partial democratic and non-democratic systems, which are often more relevant to developing countries, are thus formally considered.

Furthermore, the formal political economic model postulated in this section fills the theoretical gap in the existing literature concerning the impact of political institutional structures on the general patterns of governance. This theoretical model is constructed to capture a principal-agent type of relationship in the context of delegation of power of the members of the society to the government. Specifically, political institutions are seen as an important but incomplete social contract.<sup>6</sup> Political institutions serve the function of a contract which bounds the responsibility and shapes the incentives of the parties included in the contract. By way of political institutions, the members of the society delegate the monopolistic governing power to the government. Meanwhile, the incompleteness of this contract lies at the heart of the inquiry of the impact of power concentration. The contract is incomplete because when the members of the society (principal) entrust the government (agent) with the tasks of governing the society, the contract cannot include all the contingencies that will present in the future, and therefore will always involve uncertainties.

The underlying problem consists of designing a contract—in this case the decision-making rule—so that the agent will be led to maximize the expected utility of the principals while simultaneously maximizing their own. It is set out as a two-stage optimisation problem. First, government optimises its behaviour to maximise its own objective function given the degree of discretion inherent to the structure of political institutions. Second, from a normative perspective, members of the society optimise their choice of political institutional arrangements to maximise the quality of governance, which is an outcome of the power-sharing structure of the government.

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<sup>6</sup> The notion that the individuals create a government by way of contract is not meant to be a historically precise description but simply a heuristic mean. Buchanan (1975) believes such notion is helpful in explaining the existing institutions.

The underlying logic of this two-stage optimisation problem is that the optimisation of governance quality is, in essence, an optimisation question of the degree of discretion allowed for the government. Furthermore, this degree of discretion is closely related to the political institutional structure. As the literature reviewed in the proceeding section suggests, while severely concentrated power often allows excessive government discretion, severely dispersed power can induce too much rigidity, and hence both cases are detrimental for governance quality. The following theoretical model demonstrates that instead of either overly concentrated or fragmented, a balanced power-sharing structure is socially optimal in terms of maximising governance quality.

### 3.2 The model

Consider a society or an economy divided into two mutually exclusive parties: government ( $G$ ) and the members of the society ( $S$ ). The government is assumed to be embedded with a certain political institutional structure,  $z$ .  $z$  is between 0 and 1 ( $0 < z < 1$ ) indicating the degree of power concentration where the higher the value of  $z$  the more concentrated the political decision-making power. Specifically, in the cases of  $z$  being close to 1 and  $z$  being close to 0, they correspond to the situations approaching maximum level of power concentration and maximum level of power dispersal, respectively. As a result, political institutional structures can be characterised along a single ordering dimension. In a principle-agent context, the entity of members of the society is a principle who delegates governing power to the government (agent). The government is assumed to be the decision-maker who holds the power of policy-making. Policy choices of the government include public goods and services provision,  $X$ , the amount of rent extracted,  $R$ , and the tax rate,  $\tau$ .

It is further assumed that the members of the society derive utility from two sources: consumption of private goods and consumption of public goods and services. The utility function of the members of the society is thus denoted by:

$$U^S = U(C) + Q(X) \quad (1.1a)$$

where  $U(C)$  is the utility derived from private goods satisfying  $U_c > 0$  and  $U_{cc} < 0$ .  $X$  is supply of public goods and services evaluated by the concave and monotonically increasing function  $Q(X)$ . In addition, this utility function is assumed to satisfy the Inada conditions

$$\text{for all } C \in R_{++}, \lim_{C \rightarrow 0} (U_C) = +\infty \text{ and } \lim_{C \rightarrow +\infty} (U_C) = 0. \quad (1.1b)$$

$$\text{Similarly, for all } X \in R_{++}, \lim_{X \rightarrow 0} (Q_X) = +\infty \text{ and } \lim_{X \rightarrow +\infty} (Q_X) = 0 \quad (1.1c)$$

As the counterpart of the members of the society, the government enjoys receiving rent,  $R$ , and delivering society utilities,  $U^S$ . There is obviously a degree of trade-off between these two elements of the government's utility. The weights of the two elements are assumed to be the manifestation of the degree of benevolence/malevolence of the government,  $\delta$ . Benevolence here refers to the quality of encompassing, long-term appreciation of general good. Specifically,  $\delta$  is between 0 and 1, ( $0 < \delta < 1$ ), where the higher value of  $\delta$  indicating the more benevolent is the government. The assumption is important as to a certain extent this modelling exercise is hinged on the behaviour of government. If a conventional benevolent-social-planner-type of assumption is to be followed, it would then be conceptually inconsistent to go on talking about the positive effects of checks and balances mechanisms. As Laffont and Tirole (1991) pointed out there is a tension between the two assumptions that the regulators maximize social welfare and that they are not given free rein. This assumption, ( $0 < \delta < 1$ ), effectively accommodates the assumptions ranging from self-interested government to a benevolent social planner, and any degree in between.

The utility function of the government is as follows:

$$U^G = \delta U^S + (1 - \delta)R \quad (1.2)$$

This utility function is monotonically increasing in  $U^S$  and  $R$ .

To elaborate the intuitions, the above objective function (Eq.1.2) reflects the motives, goals and ideas of the government, broadly interpreted as the authoritative political institutions. Furthermore, people who perform the roles (one may call them actors) in such political institutions, e.g. political parties, state, legislatures, executive and judiciary branches often acquire motives, goals, ideals and means that are somewhat different (but not completely irrelevant or conflicting) from those of the actors in other institutions as well as those in the rest of the society. To a certain extent, the actors of political institutions share the objectives of the society as a whole, but a substantial amount of the habits of thought of these actors are learned in performing roles to serve somewhat different purposes. For instance, some judges seek justice; some legislators seek equality, liberty, and fraternity; some leaders of a state seek improvement in basic social welfare. However, the institutional roles they perform, at the same time may be characterised by self-interested motives, in various forms: individual benefits from collusion with economic high-power or from manipulation in policies, and so on.<sup>7</sup> With the assumption

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<sup>7</sup> The assumption of a government objective function diverging from that of the members of the society can also be interpreted as a realisation that government, in many cases, is not of the people, by the people, and for the people. The inability of some governments to act as a countervailing force in the public interest is consistent with the intuition that those governments may serve as the agents of some minority segments of the society, who are often rich and powerful. Primarily due to the reason that investigating the motives or the role of government is not the major task of this thesis, the discussion of the objective of government is

of  $\delta$  and government objective function, this model formally recognises the partially noncoincidence of the goals of the government and the members of the society.

The budget constraint of the members of the society is

$$C = Y(1 - \bar{\tau}) \quad (1.3)$$

where  $Y$  is gross income before taxes and  $\bar{\tau}$  denotes the effective tax rates.

Government revenue,  $\bar{\tau}Y$ , is assumed to be either spent on public goods and services provision or kept as rent.

Political institutional structure has a significant impact on the making of public policies. On the one hand, concentrated power tends to entail arbitrary and discretionary behaviour, and reduce the credibility of government policies. On the other hand, fragmented power-sharing structures often encourage budget deficits and delay responses to situations where swift and timely policies are required. To capture the effects of the configuration of political institutions, the cost of public goods and services provision as well as that of rent extraction both should be considered. Specifically, the unit cost of public goods or services is assumed to be the sum of the unit cost of private consumption good production plus an inefficiency factor, i.e.  $q_1 - (1 + \hat{q}_1)$ , where  $\hat{q}_1 (\hat{q}_1 \in (0,1))$  is the inefficiency factor due to the complication of fragmentation of political power. As a result, the costs of public goods and services provision decrease in the degree of power concentration. Meanwhile, the unit cost of reaping rent also decreases as the degree of insulation and discretion enjoyed by the government increases due to the intensified power concentration. The cost factor of rent extraction is similarly defined as  $q_2 - (1 + \hat{q}_2)$ , where  $\hat{q}_2 (\hat{q}_2 \in (0,1))$ . It is assumed that the elasticity of the cost of public goods and services provision is greater than that of the cost of rent-seeking behaviour.<sup>8</sup>

The budget constraint of the government is

$$\bar{\tau}Y - q_1(z)X + q_2(z)R \quad (1.4)$$

where both  $q_1(z)$  and  $q_2(z)$  monotonically decrease in  $z$  and they satisfy  $i = 1, 2$

$$\lim_{z \rightarrow 1} (q_i') = 0 \quad \text{and} \quad \lim_{z \rightarrow 0} (q_i') = -\infty \quad (1.5)$$

For simplicity, normalise the output  $Y = 1$ . Consequently,

$$Y - C + \bar{\tau}Y - C + q_1(z)X - q_2(z)R = 1 \quad (1.6)$$

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not extensive. Rather it is refined to provide some justification of two diverging objective functions of the government and the members of the society.

<sup>8</sup> To provide some justification of this assumption, see a survey by Posner (1987) in which he emphasizes that the separation of power increases the transaction costs of governing.

Building upon the above set-up, the rest of the model is constructed as a two-step optimisation problem. First, being power holder as well as policy-maker, the government maximises its utility subject to the budget constraint it faces. In the second step, the utility of the members of the society is evaluated with respect to various configuration of power, given the outcome provided in the first step. As a result, the model suggests a socially optimal political institutional structure which is consistent with maximising governance quality from a normative perspective.

The optimisation problem of the government is to maximise Eq(1.2) subject to Eq(1.6). The Lagrange function is thus

$$F - \delta[U(C) + Q(X)] - (1 - \delta)R - \mu[C - q_1(z)X - q_2(z)R - 1] \quad (1.7)$$

where  $\mu$  is the Lagrange multiplier. The first order conditions (FOC) are as the follows

$$\frac{\partial F}{\partial C} - \delta U_C - \mu = 0 \quad (1.8a)$$

$$\frac{\partial F}{\partial X} - \delta Q_X - \mu q_1(z) = 0 \quad (1.8b)$$

$$\frac{\partial F}{\partial R} - (1 - \delta) - \mu q_2(z) = 0 \quad (1.8c)$$

$$\frac{\partial F}{\partial \mu} - C + q_1(z)X + q_2(z)R - 1 = 0 \quad (1.8d)$$

These four equations have four unknown variables. After some transformation, the following results for the government optimisation problem can be obtained.  $C^*$  is the amount of private goods consumed by the members of the society such that

$$U_C(C^*) = \frac{1 - \delta}{\delta q_2(z)} \quad (1.9a)$$

Because  $U(C)$  is concave and monotonically increasing in  $C$ ,  $C^*$  increases in  $\delta$ . Also, because  $q_2(z)$  is decreasing in  $z$ ,  $C^*$  decreases in  $z$ .

$X^*$  is the amount of public goods and services provided to the members of the society as an optimal choice of the government.  $X^*$  is defined as such that

$$Q_X(X^*) = \frac{1 - \delta}{\delta} \frac{q_1(z)}{q_2(z)} \quad (1.9b1)$$

As  $Q(X)$  is concave and monotonically increase in  $X$ ,  $X^*$  is increasing in  $\delta$ . The impact of the degree of power concentration  $z$  on  $X^*$  depends on the comparative elasticity of  $q_1(z)$  and  $q_2(z)$  with respect to  $z$ . By definition, the inefficiency in public goods and

services provision due to complication in fragmentation of political power is more sensitive than the increasing difficulties of appropriating rent due to power separation,

$\frac{q_{1z}(z)}{q_1(z)} < \frac{q_{2z}(z)}{q_2(z)}$ , note that  $q_{1z}(z), q_{2z}(z) < 0$ ,  $X^*$  increases in  $z$ . To see this,

$$\frac{\partial Q_X(X^*)}{\partial z} = \frac{1-\delta}{\delta} \frac{q_1(z)}{q_2(z)} \left[ \frac{q_{1z}(z)}{q_1(z)} - \frac{q_{2z}(z)}{q_2(z)} \right] < 0 \quad (1.9b2)$$

As a result, 
$$R^* = \frac{1 - C^* q_1(z) X^*}{q_2(z)} \quad (1.9c1)$$

Therefore, both  $C^*$  and  $X^*$  increase in  $\delta$ ,  $R^*$  is decrease  $\delta$ . However, with  $C^*$  decreases in  $z$  and  $X^*$  increases in  $z$ , the partial impact of the degree of power concentration on  $R^*$  is ambiguous. To see this, take partial derivative of  $R^*$  with respect to  $z$ . It leads to

$$\frac{\partial R}{\partial z} = \frac{1}{q_2(z)^2} \{ [-C^*_z - q_{1z}(z) X^* - q_1(z) X^*_z] q_2(z) + [C^* - q_1(z) X^* - 1] q_{2z}(z) \} \quad (4.9c2)$$

However, this ambiguity does not prevent the model from deriving the next step normative optimisation problem. The normative question concerned here is with what structure of political institutions is the utility of the members of the society maximised. Before proceeding to solve this normative question, results of the government optimisation problem can be summarised as follows. For any given structure of political institutions of the government, the more benevolent the government the more private goods as well as public goods and services are enjoyed by the members of the society. In the meantime, less rent is extracted by the government. On the other hand, *ceteris paribus*, the more concentrated the configuration of political power, the less private goods are consumed by the members of the society but more public goods and services are provided due to the reduction in costs.

In this study, quality of governance is defined as the capacity of government to internalise externalities with its policy decisions. Good governance means reduction of self-interested behaviour and considering the interests of the society as a whole. More fundamentally, good governance implies the optimisation processes of individual players and that of the rest of the society are aligned due to government policies. Given the structures of the political institutions, in the first step of this model, the government chooses policies that maximise its own payoff, subject to the constraints. Subsequently, from a normative point of view, an optimal political institutional structure is derived in terms of maximising the utility of the members of the society. Precisely in this process,



the resulted utility of the members of the society represents the degree of alignment of the interests of the power holders and that of the society, i.e. the governance quality.

Denote the quality of governance  $\bar{\pi}$ .  $\bar{\pi}$  is therefore a positive transformation of the utility of the members of the society as an outcome of government's policies, which can be written as

$$\bar{\pi} = F[U(C^*(\delta, z)) + Q(X^*(\delta, z))] \quad (1.10)$$

The normative question is to choose  $z$  that maximises  $\bar{\pi}$ . Provided the results obtained from the government optimisation problem,  $C^*$  and  $X^*$ , this question is equivalent to choose  $z$  to maximise utility of the members of the society,  $U_s$ .  $C^*$  and  $X^*$  are both functions of the degree of benevolence of the government ( $\delta$ ) and the political institutional structure of government ( $z$ ), i.e.  $C^*(\delta, z)$  and  $X^*(\delta, z)$ . The relationship between the utility achieved by the members of the society and the degree of government benevolence is clearly positive and monotonic. To find the socially optimal political institutional structure, the Lagrange-multiplier method is applied to obtain the maximum of  $U_s(U(C^*), Q(X^*))$  with constraint that ( $0 \leq z \leq 1$ ). The Lagrange function is

$$F_s - U(C^*(\delta, z)) + Q(X^*(\delta, z)) \quad (1.11)$$

subject to  $0 \leq z \leq 1$

To maximise Eq(4.11), the first order condition is

$$F_s'(z) = U_c \frac{\partial C^*}{\partial z} + Q_x \frac{\partial X^*}{\partial z} = 0 \quad (1.12)$$

Following Eq(1.9a) and Eq(1.9b2) that  $\frac{\partial X^*}{\partial z} > 0$  and  $\frac{\partial C^*}{\partial z} < 0$ , it is possible there exist an optimum that satisfies Eq(1.12). Let  $z^*$  denote the socially optimal structure of political institutions, thus  $z^*$  satisfies

$$F_s'(z^*) \leq 0 \text{ and } z^* F_s'(z^*) = 0 \quad (1.13a)$$

$$F_s'(z^*) \geq 0 \text{ and } (1 - z^*) F_s'(z^*) = 0 \quad (1.13b)$$

Additionally,  $F_s$  satisfies the Inada Conditions for  $U(C)$  and  $Q(X)$ , (see Eq(1.1b) and Eq(1.1c)), therefore  $F_s'(0) \neq 0$  and  $F_s'(1) \neq 0$ . As a result,  $z^*$  is an interior solution. Moreover, it implies that  $F_s'(z)$  changes sign along the spectrum of  $z$ . When  $z \rightarrow 0$ ,  $F_s'(z)$  is positive. As  $z$  becomes larger  $F_s$  increase, but the additional value of  $F_s$  due to the change of  $z$  is diminishing. In other words, when the political institutional structure

equals  $z^*$ , the interests of the members of the society and that of the government are best aligned. If  $z$  is greater or less than  $z^*$ ,  $F_s$  decreases. Therefore, the optimal political institutional structure in terms of maximising quality of governance is somewhere in the middle instead of at either extreme of the spectrum of the power concentration. With this optimisation process of the members of the society, the optimisation carried out by government is taken into account. The above model demonstrates that the impact of power concentration on quality of governance is non-monotonic.

### 3.3 Extension of model

Different levels of development are thought to be associated with a host of important characteristics, such as social infrastructure, mass education, the judiciary system and enforcement of the rule of law. These factors are essential in shaping the impact of political institutions. This subsection extends the previous model to incorporate the concept of stages of development.

Recall that it is assumed that the unit cost of public goods and services provision and that of the rent extraction, albeit for different reasons, are an increasing function of the sophistication of the power-sharing structure. In this extension, modifications are made to the cost factors,  $q_1(z)$  and  $q_2(z)$ . Denote the new cost factor  $\tilde{q}_1 = 1 + \bar{q}_1(z, y)$ , where  $\bar{q}_1(\bar{q}_1 \in (0, 1))$  is an inefficiency factor. It captures the rigidity associated with complication of the political institutional structure as well as the impact of levels of development on the affordability of public goods and services provision. Consistent with

the original model, it is assumed that  $\frac{\partial \tilde{q}_1}{\partial z} < 0$ . Furthermore, it is assumed that  $\frac{\partial \tilde{q}_1}{\partial y} < 0$

which implies with improvement in the average income level, the public goods and services provision subsequently become more affordable. Similarly, denote  $\tilde{q}_2 = 1 + \bar{q}_2(z, y)$ , where  $\bar{q}_2(\bar{q}_2 \in (0, 1))$ . This factor captures the effects of power concentration and levels of development on the relative costs of rent extraction by the

government. As in the original model, it is assumed that  $\frac{\partial \tilde{q}_2}{\partial z} < 0$  indicating the higher costs involved in extracting rent when there are more checks and balances as the structure of political institutions becomes increasingly fragmented. Moreover, a higher level of development is typically associated with higher average income per capita, higher relative productivity and material welfare. More relevant to the institutional context, developed countries are often characterised by higher average education attainment, better social infrastructure and the means for monitoring and revealing rent-seeking

behaviour. Consequently, the more developed a country, the more costly for its

government to extract rent, i.e.  $\frac{\partial \bar{q}_2}{\partial y} > 0$ .

Re-write the optimisation problem of government to maximise Eq(1.2) subject to  $C + \bar{q}_1(z, y)X - \bar{q}_2(z, y)R = Y$  (1.14)

The new Lagrange function is

$$F = \delta[U(C) - Q(X)] + (1 - \delta)R - \mu[C + \bar{q}_1(z, y)X - \bar{q}_2(z, y)R - Y] \quad (1.15)$$

where  $\mu$  is the Lagrange multiplier. The first order conditions (FOC) are as follows

$$\frac{\partial F}{\partial C} = \delta U_C - \mu = 0 \quad (1.16a)$$

$$\frac{\partial F}{\partial X} = \delta Q_X - \mu \bar{q}_1(z, y) = 0 \quad (1.16b)$$

$$\frac{\partial F}{\partial R} = (1 - \delta) - \mu \bar{q}_2(z, y) = 0 \quad (1.16c)$$

$$\frac{\partial F}{\partial \mu} = C + \bar{q}_1(z, y)X - \bar{q}_2(z, y)R - Y = 0 \quad (1.16d)$$

In addition to the set of results obtained in subsection 3.2, the inclusion of levels of development leads to a number of important results. First, from Eq(1.16a)

$$U_C(C^*) = \frac{1 - \delta}{\delta \bar{q}_2(z, y)} \quad (1.17)$$

By definition,  $U(C)$  is concave and monotonically increases in  $C$ , and  $\bar{q}_{2y} - \frac{\partial \bar{q}_2}{\partial y} > 0$ , the optimal private goods consumption  $C^*$  is increasing in  $y$ . Moreover, from Eq(1.16b)

$$Q_X(X^*) = \frac{1 - \delta \bar{q}_1(z, y)}{\delta \bar{q}_2(z, y)} \quad (1.18)$$

Recall that  $Q(X)$  is concave and monotonically increases in  $X$ ,  $\frac{\partial \bar{q}_1}{\partial y} < 0$  and  $\frac{\partial \bar{q}_2}{\partial y} > 0$ ,

therefore,  $\frac{\partial Q_X(X^*)}{\partial y} = \frac{1 - \delta}{\delta} \frac{[\bar{q}_{1y}\bar{q}_2(z, y) - \bar{q}_{2y}\bar{q}_1(z, y)]}{[\bar{q}_2(z, y)]^2} < 0$ . As a result, the optimal provision of public goods and services  $X^*$  is also increasing in  $y$ .

The normative question of maximising governance quality is equivalent to the maximisation of the interests of the members of the society provided the choices of

government from the first stage. As  $C^*$  and  $X^*$  have the same properties with respect to  $\delta$  and  $z$  as in the original model, the optimal structure of political institutions in terms of maximising governance quality,  $z^* = \arg \max \pi$ , is expected to correspond to an interior solution. Furthermore, levels of development,  $y$ , affect the resultant governance quality. Given any form of political institutional arrangements,  $z$ , both  $C^*$  and  $X^*$  are increasing in  $y$ , therefore the model predicts that governance quality,  $\pi = F[U(C^*(\delta, z, y)) + Q(X^*(\delta, z, y))]$  is also increasing in the levels of development.

More importantly, stages of development,  $y$ , have an important implication for  $z^*$ . It shows that, *ceteris paribus*, the higher the levels of development, the more dispersed is

the optimal structure. To see this, first derive  $\frac{\partial \bar{r} \bar{q}_1}{\partial z \partial y} > 0$ , indicating that the value of  $\frac{\partial \bar{q}_1}{\partial z}$

increases as  $y$  becomes larger. Recall  $\frac{\partial \bar{q}_1}{\partial z} < 0$  implying the increase in cost of public goods and services provision due to the complication of fragmented political power. Meanwhile,

$\frac{\partial \bar{r} \bar{q}_1}{\partial z \partial y} > 0$  also suggests that the benefit of concentrated political institutional structure in terms of lowering the costs of public good and services provision is diminishing as the

level of development improves. On the other hand,  $\frac{\partial \bar{r} \bar{q}_2}{\partial z \partial y} < 0$ , which implies that  $\frac{\partial \bar{q}_2}{\partial z}$

decreases in value as the level of development improves. Recall that  $\frac{\partial \bar{q}_2}{\partial z} < 0$  indicates the increase in the cost of extracting rent due to checks and balances associated with

power separation.  $\frac{\partial \bar{r} \bar{q}_2}{\partial z \partial y} < 0$  suggests that the impact of fragmentation of power on the cost of rent extraction is increasing as the stage of development enhances.

In summary, an increase in the level of income decreases the marginal benefit of concentrated power in terms of costs saving in public goods and services provision. Meanwhile, it enhances the marginal benefit of power dispersion by increasing the cost of rent extraction. As a result, the above model predicts that if an economy moves upwards on the ladder of development, the optimal political institutional structure in terms of maximising governance quality becomes increasingly fragmented. Furthermore, this implies the existence of multiple optimums on the spectrum of political institutional configuration. With respect to different levels of development, the optimal arrangement of political power varies accordingly.

Intuitively, this extension of the original model accommodates the idea that the optimal structure of political institutions at least partially depends on the stage of development.

However, it is important to emphasize the prediction that the optimal configuration of political power is less dispersed for poorer countries than for rich countries does not lead to the assertion that checks and balances are not important or less desirable in poor countries. On the contrary, maintaining credibility tends to be economically important in developing countries (World Bank, 2002). What the foregoing conclusions highlight is that the trade-off between credible commitment and flexibility may have different implications for countries at various stages of development. More generally, this provides a theoretical explanation for the notion that there is no “one-size-fits-all” organizational template that can be indiscriminately applied across the board to ensure optimal governance.

## **Section IV Preliminary empirical results**

### ***4.1 Hypotheses, data and basic description of econometric strategy***

- *Hypotheses*

This section quantitatively examines the hypotheses derived from the proceeding model: 1) The impact of political institutional structures on governance quality is non-monotonic; 2) For a given level of economic development, there is an optimal level of power-sharing structure corresponding to the best achievable governance quality; 3) The optimal structure of political institutions becomes increasingly fragmented as the level of economic development improves; 4) political institutional configurations affect long-run economic growth in a non-monotonic fashion.

- *Data*

Variables of political institutional structures focus on the fundamental configuration of political power, which are obtained from the Database of Political Institutions 2000 (Keefer et al. 2002) (hereafter DPI 2000).<sup>9</sup> This dataset provides particularly useful information on many aspects of political institutions across 177 countries and over 26 years, 1975-2000.

Data for governance quality are from Kaufmann, Kraay, and Zoido-Lobaton (1999, 2002) and Kaufmann, Kraay and Mastruzzi (2003) governance indicators (hereafter KKZ<sup>10</sup>). These indicators capture six dimensions of governance quality, covering 199 countries in 1996, 1998, 2000 and 2002. The six dimensions include *Voice and accountability*, *Political stability*, *Government effectiveness*, *Regulatory Quality*, *Rule of law*, and *Control of corruption*. The values of these indicators are derived based on several

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<sup>9</sup> This is the latest version after a series of revision and updates. Earlier versions of DPI include DPI (Beck et al., 2000) and DPI Version 3 (Beck et al., 2001).

<sup>10</sup> Kaufmann, Kraay and Mastruzzi (2003) are an update and expansion of the previous work by Kaufmann, Kraay and Zoido-Lobaton (1999, 2002), for simplicity, therefore, the dataset is referred as KKZ.

hundred variables measuring perceptions of governance drawn from 25 separate data sources constructed by 18 different organizations.<sup>11</sup> Using an unobserved components model, individual measures of governance perceptions are assigned to the above six categories to capture the key dimensions of governance.

Data on economic growth, initial levels of income per capita and other widely used economic variables such as openness, education attainment, and trade, etc. are obtained from various sources, including the Penn World Table Database 6.1 (Heston and Summers, 2002), World Development Indicators (WDI) of the World Bank Data series, Barro and Lee (1996) international measures of schooling, etc. The selection of the explanatory variables is primarily based upon Bleaney and Nishiyama (2002), in which they identify an encompassing model to account for the differences in international growth performance.<sup>12</sup>

- *Basic description of econometric strategy*

One of the methods to examine the existence of a non-monotonic relationship is to test a quadratic specification between the indicators of governance quality and the power concentration index. Henderson (2003) provides some useful econometric strategies, particularly on testing for optimal degree of a variable impact on a dependent variable. The basic model hypothesizes that governance quality is a function of political institutional structure and an unobserved variable, included as an intercept.

$$\pi_i = \beta_0 + \beta_1 CHECKS_i + \beta_2 CHECKS_i^2 + \varepsilon_i \quad (2.1)$$

where,  $CHECKS_i$  denotes the degree of political power dispersal of country  $i$ , with greater value of  $CHECKS_i$  indicating higher fragmentation of power and more checks and balances.  $\pi$  denotes levels of governance quality and  $\varepsilon_i$  is assumed to be a contemporaneous error term. The working hypothesis for Eq(2.1) is that  $\beta_1 > 0$  and  $\beta_2 < 0$ , and consequently it implies the optimal degree of power-sharing is the point  $(-\beta_1 / 2\beta_2)$ , where  $\pi$  is maximised.

Theoretically, to capture the endogeneity of the optimal structure of political institutions, it is possible to hypothesize that optimal structure of power  $CHECKS^*$  increases as output per worker (or income per capita) rises. The econometric model is similar to Henderson's (2003) approach as in the following form:

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<sup>11</sup> Details of these 25 sources are listed in KKZ (1999, 2002) and Kaufmann, Kraay and Mastruzzi (2003).

<sup>12</sup> Due to limited space, detailed statement on data sources and basic statistic summary of the variables as well as discussion on the pros and cons of the data employed are not included here but are available upon request.

$$\pi_i = \beta_0 + (\alpha_0 - \alpha_1 \ln(\frac{Y_i}{N_i}))CHECKS_i + \beta_1 CHECKS_i^2 + \varepsilon_i \quad (2.2)$$

The working hypothesis is that the collection of terms multiplying power-concentration is

positive, i.e.  $(\alpha_0 + \alpha_1 \ln(\frac{Y_i}{N_i})) > 0$ , while  $\beta_1 < 0$ ; and  $\alpha_1 > 0$  so that the best structure of political institutions is getting more fragmented as output per worker (or income per capita) increases. The optimal power concentration is given by

$$-\frac{\alpha_0 + \alpha_1 \ln(\frac{Y}{N})}{2\beta_1} \quad (2.3)$$

An alternative method to test the above hypothesis is to include dummy variables that characterise differences in levels of economic development in the regression.

The focus of the growth regression is to explore the core question — does political institutional structure affect growth in a non-monotonic fashion? Given that the data on political institutions are independent from economic performance measurements and relate to the quality of governance, DPI can be used as instruments for governance quality measurements in the growth regression. Built upon Bleaney and Nishiyama's (2002) encompassing model, a two stage least square approach is adopted in this part of the empirical investigation by using the predicted values of governance quality from proceeding estimations.

#### 4.2 Summary of testing results

- *Political institutional structure and governance*

The estimated basic relationship between political institutional structures and governance quality is summarized in *Table 1*. Dependent variables are various indicators of governance quality from KKZ (2003) taken from year 2002 dataset.<sup>13</sup> The null hypothesis is that the relationship between power structure *CHECKS* and governance quality  $\pi$  is monotonic.

*Table 1 is about here.*

The estimates have uniformly rejected a linear relationship between political institutional structure and the quality of governance. In the meantime, variation in the results probably reflected the various aspects of governance quality captured by different indicators. For example, what is probably captured by the *Voice and Accountability* indicator is the

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<sup>13</sup> Results using 2000, 1998 and 1996 do not suggest qualitatively different conclusions.

degree of transparency. Transparency, as a means to encourage political competition and regulate power, is about the feedback mechanism that rewards good policies and punishes bad ones. Therefore, the first order impact of division of power on governance quality is strongest among all indicators.

- *Optimal structures and levels of development*

Using six governance quality indicators from KKZ (2003), regression results of estimating Eq(1.2) are reported in *Table 2*. In comparison to *Table 1*, the results reported in *Table 2* continue to reject the hypothesis of a monotonic relationship between political institutional structure and governance quality at an overall level. In addition, an interaction term of the power-sharing structure (*CHECKS*) and the log of GDP per capita has statistically significant and positive sign. The estimations indicated that optimal dispersal of political power is positively correlated with income level.

*Table 2 is about here.*

- *Political institutional structure and economic growth*

*Table 3* presents the results of a series of growth regressions, including all the key variables identified in Bleaney and Nishiyama (2002). Column (1) shows the specification used as a benchmark in this study, which is built upon the encompassing model of Bleaney and Nishiyama (2002) and extracted institutional quality variables and the squared term of initial income level.<sup>14</sup> Despite the male schooling and terms of trade growth turning out to be statistically insignificant, the overall statistics are satisfactory with adjusted *R* square of 0.80 and pass all diagnostic tests.

*Table 3 is about here.*

Using the results obtained in Column (1) as a basis, the subsequent regressions include additional institutional variables in various specifications directly derived from earlier theoretical arguments. Specifically, as shown in Column (2), the fit improved when predicted values of governance quality are added to the regression. Columns (3) and (4) present the estimation results when political institutional structures (*CHECKS*) as well as the quadratic specification are included in the growth regression. The null hypothesis is that the relationship between growth and configuration of political institutions (*CHECKS*) is monotonic. Results show that the inclusion of *CHECKS* and *CHECKS-squared* strengthens the results by not only improving the degree of fit and reducing the standard

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<sup>14</sup> The inverted U-shape relationship between growth and initial per capita income is not explored in these models because an inclusion of second order term of initial income level not only makes the specification unnecessarily more complicated, but also drives down the significance of the first order term of initial income level.



deviation of residuals but also by increasing the significance of the coefficient estimate of governance quality indicator. Column (5) provides the testing results of an additional hypothesis that long-run growth is negatively affected by *distance*. The variable *distance* is the absolute value of the difference between a country's actual political institutional structure (*CHECKS*) and its optimal structure (*CHECKS\**) implied by Eq(2.3). The coefficient estimate of *distance* is negative and statistically significant at 10% level. These results suggest the data do not reject the hypothesis that such distance is a determinant that helps explain long-run economic growth.

The empirical findings of this chapter have underlined the crucial role of political institutions and governance in the process of economic development. It is emphasized that the real challenge of obtaining good governance for growth lies in this: on the one hand, a government needs to have the authority and strength to define and protect property rights as well as provide public goods and services to foster growth; on the other hand, a necessary condition for good economic performance is a government that has structures which enable authority to regulate itself from predation. Good governance is characterised by both flexibility and credibility, and it is most likely to be achieved by a balanced – neither excessively or deficiently fragmented – power-sharing structure.

In addition, the above statistical findings have also provided possible explanations of why a cross-country exercise often finds inconclusive results when regressing institutional variables against economic growth. Firstly, this study suggests that a linear specification of the configurations of power and the quality of the governance or economic performance is likely to cause inconclusiveness due to the non-monotonicity of the relationship. There is no one-to-one relationship between the structures of political institutions and the levels of governance quality and in turn the rates of growth. Secondly, to isolate institutions from their political and economic causes is a delicate problem. Previous empirical studies sometimes treat institutions like a black-box accounting for almost everything unexplained by conventional determinants of economic growth. This study has explicitly distinguished the structures of political institutions and their outcome. In addition, optimal structures are shown to be different across countries at various levels of development. Moreover, it is, *ceteris paribus*, the distance of a country's power structure relative to the optimal one that determines that country's governance quality accordingly.

However, economic and political institutions are complex, and quantitative measurement and statistical approach are inevitably suffering from the defects of data and measurement problems in addition to various complications in applying econometric techniques. To a large extent, the vast but inconclusive empirical studies related to the economic effects of institutions reflect the special difficulties research in this field confronts. The above

quantitative exercise does not intend to investigate formally all the hypotheses derived from the theoretical models. Considering the imperfect, often problematic, data and the complex interaction amongst the variables, it is perhaps only sensible to claim the findings are indicative rather than definitive.

## **Section V Summary and discussion**

The conventional neoclassical wisdom is that economic growth is largely determined by the accumulation of physical capital, human capital, and knowledge usable in production. These factors are considered as proximate determinants of economic growth which postulate the immediate connection between the productive factors and economic outcome. Today, for many economists, economics is to a large extent a matter of incentives, because the changes in productive factors are primarily driven by decisions of economic agents. The decisions are in turn shaped by incentives: incentives to work hard, to produce good quality products, to study, to invest, to save, etc (Laffont and Martimort 2002). Therefore, in many ways, incentives are deeper determinants behind the immediate productive factors. It is the changes in incentives that in turn affect human behaviour. Adam Smith argues if internal institutions of civil law and property rights failed to insure an adequate degree of security for economic actors, incentive for productive activity and capital accumulation, including human capital, will not exist.

In practice, the macro and accumulation-oriented policies in East Asia have been widely discussed, in which the role of state has often been highlighted, particularly the capacity of a government to design and implement a development-oriented interventionist agenda. However, the difficulty of implementing 'good policies' based on the successful experience of some other economies has motivated economists to consider factors beyond the conventional realm of economics. Summers (2004) summarised that an overwhelming lesson of the 1990s is the transcendent importance of the quality of institutions and closely-related questions of the efficacy of political administration. The high performing Asian economies (HPAEs) have also demonstrated that the challenge of economic growth often lies in the coordination of expectations of different sectors of the population. Consistent with what the preceding sections have suggested, it has become increasingly clear, that many economic issues have much to do with institutions, particularly political institutions. Political institutions are foremost concerned with providing incentives to select good policies and to guarantee they are implemented well. Therefore, the power base of a government is important. Economic policies are often manifestation of government's rationale reflecting its objectives and ideologies. The political equilibrium has to allow the pro-growth policy making and policy implementation to take place.

Much of the current battle in the growth literature takes place on the empirical ground. The recent resurgence of the institutionalist research focuses attention directly on institutional structures and the process through which they shape the decisions made by social actors. It adds institutions and the dimension of time to the neoclassical framework. As such, it offers a more tenable framework for explaining variations in performance, and offers more useful guidance for formulating economic policy. To date, it is widely accepted that studies on economic development need to be considered in the broader political and institutional context. Markets and incentives are the key to understanding economic growth and development. Many recent studies have attempted to place markets in an institutional context within which various “agents”, such as consumers, firms, politicians, and voters interact. However, there has not been a unanimous conclusion on the fundamental driving forces of economic growth and the relative importance of institutions remains an on-going debate.

Following a two-step approach, this paper has investigated theoretically the impact of political institutional configurations on governance quality. Building upon arguments proposed by MacIntyre (2003) that attempted to reconcile two somewhat contradictory ideas on the power dispersion and resulted governance quality, this study has emphasized the trade-off between credibility and flexibility associated with different structures of political institutions. It suggested a non-monotonic relationship between the degree of power dispersal and governance quality. In the subsequent empirical study section, it further examined the implications of such relationship for economic growth. At an overall level, the theories and empirical findings of this study on the growth effect of political institutions have echoed and further developed some of the most important works on this subject. For example, Olson (2000) identifies the conditions necessary for economic success, and suggests the type of governments needed for growth: on the one hand, secure and well-defined rights of private property and impartial enforcement of contracts and, on the other hand, the absence of predation.

In addition, the important implication of differences in levels of economic development in the context of political institutions and growth was also highlighted. Among the host of determinants of the optimal structure of political institutions, the level of economic development is crucial. Levels of economic development capture the different conditions in which economies operate and the various challenges arise. The theoretical models in this thesis imply that at higher levels of economic development, optimal political institutional configurations are relatively more fragmented than at lower levels of development.

Two implications stem from this conclusion. Firstly, the trend over the past two decades has been to examine “success stories” and encourage emulation of these policies by other

economies. However, by implicitly treating all economies as interchangeable, policy-oriented perspective—in either its ‘simple-minded’ free market view or the interventionist variant—fails to account for the significant influence of a state's political and economic structures on the potential efficacy of various policy options. By presuming all economic actors to be interchangeable rational utility maximisers, the free market model underplays the role that specific institutional and cultural structures can have in shaping economic development. North (1994) clearly pointed out “*when applied to economic history and development, it (neoclassical theory) focused on technological development and more recently human-capital investment but ignored the incentive structure embodied in institutions that determined the extent of societal investment in those factors.*” This study has joined a large number of studies advocating that there are no “one-size-fits-all” policies or a “prescription or recipe” of a combination of policies that are applicable to all countries. Given the diverse historic and socio-political circumstances each particular country is situated, the outcome of certain policies are highly dependent on the interaction of all these factors. Therefore, policies that are associated with favourable economic performance in one country do not necessarily lead to the similar outcome when they are applied in another country. The merit of cross-country growth regressions probably lies in the revelation of some common factors that help explain why growth experiences have been so widely divergent internationally.

Secondly, economic performance depends on the compatibility of the political institutions and a country’s idiosyncratic characteristics. The degree of optimality of political institutional structure depends on cultural and ideological circumstances in particular societies at particular stages of development. The remarkable performance of the fast developing economies in the region has offered new perspectives on the kinds of political institutions that encourage economic growth. The present study suggests that a key determinant of whether growth can be sustained is whether the political institutional structure can evolve in ways that will meet the demands of changing economic conditions. More specifically, strong and decisive government has helped provide an environment in a number of East Asian countries for an extended period of time, so that markets can work effectively. However, the political institutional characteristics that cultivated growth at one time may not be optimal for future economic growth. As an economy moves up to higher rungs of the development ladder, further economic growth requires continuing far-reaching structural change, particularly in terms of political institutions, in response to changes in the broad socio-economic and political circumstances.

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**Table 1 Basic relationship between political institutional structure and governance quality**  
 Dependent Variable: Various Governance Quality Indicators (KKZ 2003)

	Government Effectiveness	Regulatory Quality	Voice and Accountability	Control of Corruption	Rule of Law	Political Stability
Structure (CHECKS)	0.87*** (6.17)	0.85*** (6.12)	1.13*** (9.71)	0.83*** (5.68)	1.01*** (7.67)	0.78*** (5.09)
Structure-squared (CHECKS <sup>2</sup> )	-0.07*** (-3.70)	-0.07*** (-3.59)	-0.09*** (-5.81)	-0.07*** (-3.45)	-0.09*** (-4.87)	-0.08*** (-3.51)
Constant	-1.50*** (-7.64)	-1.50*** (-7.74)	-2.00*** (-12.36)	-1.43*** (-7.02)	-1.68*** (-9.17)	-1.26*** (-5.91)
N [countries]	171	171	171	171	171	168
Adjusted R <sup>2</sup>	0.32	0.32	0.54	0.27	0.39	0.19
Implied optimal power structure (CHECKS*)	6.0	5.6	6.0	5.9	6.1	5.2

Note: t-ratios are in the parentheses.

\*\*\*, \*\*, \* indicate estimates are significant at 1% level, 5% level and 10% level, respectively.

**Table 2 Estimation results of the relationship between optimal political institutional structure and levels of economic development**

*Dependent Variable: Various Governance Quality Indicators (KKZ 2003)*

Dependent Variables	Control of Corruption	Government Effectiveness	Rule of Law	Political Stability	Regulatory Quality	Voice and Accountability
$\alpha_0$	-1.56*** (-5.80)	-1.37*** (-5.26)	-1.31*** (-4.96)	-0.57* (-1.61)	-0.76*** (-2.97)	0.19 (0.76)
$\alpha_1$ (Coefficient of CHECKS*lnGDP p.c.)	0.22*** (10.35)	0.21*** (9.98)	0.20*** (9.51)	0.13*** (5.17)	0.16*** (7.85)	0.09*** (4.32)
Structure-squared (CHECK <sup>2</sup> )	-0.02* (-1.11)	-0.02 (-1.41)	-0.02 (-1.35)	-0.05** (-2.24)	-0.05*** (-2.89)	-0.07*** (-4.54)
Number of Observations	144	144	144	141	144	144
Adjusted R <sup>2</sup>	0.59	0.61	0.60	0.33	0.59	0.61
Implied optimal power structure(CHECKS*)	13.1 5.4 -1.82	11.8 6.0 0.5	6.4 4.7 3.0	7.7 5.5 3.3	12.0 6.2 0.7	6.8 6.0 5.3
Sample average of (Coefficient of CHECKS)	0.18	0.25	0.28	0.45	0.5	0.86

Note: t-ratios are in the parentheses.

\*\*\*, \*\*, \* indicate estimates are significant at 1% level, 5% level and 10% level, respectively.

**Table 3 Growth regressions: growth effects of political institutional structures***Dependent variable: GDP per capita growth 1965-1999*

Variable	(1) Coefficients (t-statistic)	(2) Coefficients (t-statistic)	(3) Coefficients (t-statistic)	(4) Coefficients (t-statistic)	(5) Coefficients (t-statistic)
Constant	-2.65 (-0.80)	0.19 (0.05)	-0.24 (-0.07)	-1.75 (-0.48)	1.12 (0.28)
Log initial income per capita (Y)	-1.63*** (-6.90)	-1.87*** (-6.93)	-2.40*** (-6.92)	-2.30*** (-6.81)	-2.05*** (-6.06)
Openness	6.76** (2.70)	5.80** (2.30)	1.80 (0.61)	0.58 (0.19)	3.23 (1.11)
Openness times Y	-0.48* (-1.86)	-0.48 (-1.51)	0.02 (0.05)	0.09 (0.24)	-0.22 (-0.60)
Log 1965 life expectancy	4.14*** (4.32)	3.84*** (4.02)	4.05*** (4.36)	4.13*** (4.52)	4.27*** (4.41)
Male Schooling	0.17 (1.13)	0.16 (1.13)	0.14 (1.03)	0.11 (0.77)	0.09 (0.62)
Central government saving/GDP	0.098*** (3.32)	0.093*** (3.97)	0.080*** (3.42)	0.059** (2.57)	0.079*** (3.52)
Primary product export/GDP	-3.40*** (-2.63)	-2.72** (-2.17)	-2.55** (-2.10)	-3.06** (-2.63)	-2.52** (-2.03)
Terms of trade growth	-4.09 (-0.42)	-3.42 (-0.44)	-3.10 (-0.41)	-2.66 (-0.38)	0.79 (0.10)
Tropical climate	-1.40*** (-4.31)	-1.31*** (-4.08)	-0.82** (-2.18)	-0.78* (-1.98)	-1.18*** (-3.15)
Economically active minus total population growth	1.69*** (4.26)	1.43*** (3.41)	0.97** (2.17)	0.98** (2.21)	1.17** (2.58)
Predicted governance quality		0.56* (1.72)	2.65*** (2.88)	3.23*** (3.50)	1.84** (2.56)
Political institutional structure (CHECKS)			10.14** (2.12)	11.44** (2.54)	
(CHECKS <sup>2</sup> )			-5.59* (-1.83)	-6.12** (-2.13)	
Distance ( CHECKS-CHECKS* )					-3.45* (-1.81)
Sub-Saharan Africa dummy				0.69 (1.52)	0.20 (0.46)
Latin America and Caribbean dummy				-0.13 (-0.34)	-0.35 (-0.95)
East Asian dummy				1.19** (2.46)	0.94* (1.93)
Europe dummy				0.28 (0.68)	0.03 (0.06)
No. of observations	71	71	71	71	71
Adjusted R-squared	0.80	0.81	0.82	0.85	0.84
F-statistic (p-value)	F(10,60)=29.94 (0.00)	F(11,59)=28.39 (0.00)	F(13,57)=26.09 (0.00)	F(17,53)=24.24 (0.00)	F(16,54)=23.61 (0.00)
Standard Deviation of residuals	0.723	0.705	0.671	0.597	0.625
Heteroskedasticity ( $\chi^2$ ) (p-value)	0.00 (0.98)	0.12 (0.72)	0.02 (0.88)	0.51 (0.47)	0.13 (0.72)
Normality ( $\chi^2$ ) (p-value)	0.03 (0.99)	0.93 (0.63)	2.67 (0.26)	4.35 (0.11)	0.15 (0.93)
RESET (p-value)	F(3,57)=0.55 (0.65)	F(3,56)=0.23 (0.88)	F(3,54)=1.11 (0.35)	F(3,50)=0.38 (0.77)	F(3,51)=0.41 (0.75)

Notes: The dependent variable is per capital average annual growth of PPP-adjusted GDP, 1965-1990.

Normality” presents an overall test statistic for normality based on skewness and kurtosis.

“RESET” is the Ramsey test for omitted variable.

“Heteroskedasticity” is the Breusch-Pagan/Cook-Weisberg test for heteroskedasticity.

\*\*\*, \*\*, \* indicate estimates are significant at 1% level, 5% level and 10% level, respectively.