

# **A Review of the Recent Literature on the Institutional Economics Analysis of the Long-Run Performance of Nations**

Cassey Lee

ISEAS – Yusof Ishak Institute, Singapore

E-mail: casseylee@gmail.com

Peter Lloyd

University of Melbourne, Australia

E-mail: pjllloyd@unimelb.edu.au

## **Abstract**

This paper reviews the recent (post-2000) literature which assesses the importance of institutions as a factor determining cross-country differences in growth rates or in the contemporary level of “prosperity”. It first sketches how institutional economics has evolved. It then examines critically the methods of analysis employed in the recent literature. The paper finds that this literature has made a major contribution to the analysis of the causes of economic growth but the relative importance of institutions as a determinant of long-run growth and prosperity is still a wide open question.

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Cassey Lee and Peter Lloyd

## **1. Introduction**

What explains the economic prosperity of nations? This seemingly simple question has been asked since ancient times. Rulers in the major capitals across the ancient world sought the advices of sages on ways to strengthen their power and legitimacy through actions that would bring prosperity to their lands. At the core of many of the advices rendered were rules relating to how societies should be ordered. These may be loosely translated to mean “institutions”. For modern economies, the starting point is Adam Smith, whose great book *The Wealth of Nations* (1776) was crafted in the atmosphere of the Scottish Enlightenment. Smith in his lectures and writings paid attention to the role of institutions through a theory of social development that linked the different level of subsistence (hunting, pasturage, farming and commerce) with distinct social and political structures (Skinner, 2008). Smith’s theory clearly influenced the work of Marx which, combined with Fuerbach’s materialism and Hegel’s dialectics, advanced a theory of capitalism driven by inherent conflicts. Institutions, within Marx’s framework, relate to the “superstructure”. These early ideas, either directly or indirectly, influenced many variants of “institutional economics” broadly defined – some of which were directly at odds with each other. These included American institutionalism (inspired by the German School), Schumpeter and Hayek.<sup>1</sup> The “big picture” type of theorizing evident in these theories were not always prominent. The shift from classical economics (with its emphasis on the long-run) to neoclassical economics (short run) heralded a period of relative neglect of the role of institutions. The macro-micro dichotomy within neoclassical economics further reinforced this neglect (the latter under the *ceteris paribus* assumption).

By the 1950s, questions relating to the prosperity of nations were mainly couched in terms of growth theories. The dominant model was that the Neoclassical growth model developed by Solow and Swan. It emphasized the role of capital accumulation.<sup>2</sup> Subsequent refinements sought to unpack the unexplained residual by incorporating the role of technological change and human capital.

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<sup>1</sup> American institutionalism has also been labelled as “Old Institutional Economics”. Its contributors include Thorstein Veblen, John Rogers Commons, Wesley Clair Mitchell and Clarence E. Ayers. Much later, John Kenneth Galbraith’s work has also been described as having an institutional approach. For further discussions, see Tsuru (1993), Hodgson (2004) and Ekelund and Hebert (2007).

<sup>2</sup> It is possible to argue that one exception could be the socialist calculation debate in comparative economic systems. This has to do with capitalism vs. socialism. There is also some remnants of influence of development economics; for example, the works of Rostow.

This leads us to the curious story of the current interest in institutions and growth. New empirical analyses of the historic problem of explaining differences in the economic prosperity of nations developed. This began around the year 2000, making this 21<sup>st</sup> century economics. These writers find that institutions are an important determinant of cross-country differences in the rates of economic growth. As Acemoglu, Johnson and Robinson, (2005, p. 402) expressed it, “institutions matter”. In some cases, they claim they are the main determinant. In their survey of the literature, Acemoglu, Johnson and Robinson (2005, p. 386) contrast the power of the explanation of three possible “fundamental” causes of long-run economic growth: institutions, geography and culture. They claim that differences in economic institutions are “the fundamental cause of differences in economic development.” This argument is repeated in Acemoglu and Robinson (2012, chapter 2) where geography and culture are dismissed as “theories that don’t work”. Similarly, Rodrik, Subramaniam and Trebbi (2004) claim that “the quality of institutions trumps everything else” [which in this case is geography and trade integration]. Later, however, Rodrik (2006, p. 979) called this “institutions fundamentalism” and compares it to “market fundamentalism” as in the Washington Consensus view.

From the point of view of analysis, one of the major contributions of the recent literature on institutional determinants of national long-run macro-economic performance is the development of explicit models and the testing of the hypotheses generated. Outstanding examples are Acemoglu and Robinson (2001), Easterly (2005), Rodrik, Subramaniam and Trebbi (2004) and Besley and Persson (2011). These authors also emphasised the need to establish true causation rather than spurious causation. A third development in post-North institutionalism is the attempt to endogenise institutions, to explain the origins of economic institutions in terms of political institutions and mechanisms (for example, Acemoglu and Robinson (2001) and Acemoglu, Johnson and Robinson (2005 and 2012)).

There are a number of lengthy reviews of the recent literature on institutions and growth: for example, Acemoglu *et al* (2005), Shirley (2005), Ogilvie and Carus (2014) and Leite, Silva and Afonso (2014). We seek to add to these surveys by first, as background, sketching how institutional economics has evolved and then by examining critically the methods of empirical analysis employed in the recent literature. In doing so, we focus on contributions which are seminal for the development of the ideas and methods of analysis or illustrative of different aspects of analysis. We do not survey work that examines the relationship between institutions and single factors that may affect the rate of economic growth/prosperity such as innovation, entrepreneurship or democracy or the work on institutions and growth in individual nations<sup>3</sup>, for all of which the literature is substantial.

## **2. The Mainstream Turn to Institutions**

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<sup>3</sup> There are some exceptions here where the study of individual countries, particularly China, has raised issues of general interest.

Institutions have, without question, become more important in the economics literature. The mainstreaming of the role of institutions can be seen in the number of published articles on institutional economics and in the awarding of four Nobel Prizes (Coase, North, Williamson, and Ostrom) for those working in the area. International agencies such as the World Bank and IMF have focused on institutions in their major publications; the former in its 2002 World Development Report and the latter in the 2003 World Economic Outlook. How did institutions become an important topic of study in economics amidst the generally institution-barren landscape of twentieth century neo-classical economics?

There are a number of potential sources for the “rediscovery” of institutions by mainstream economists. The term “New Institutional Economics” (NIE) has been used to denote this literature on the economics of institutions. A key source of influence for the NIE was Ronald Coase’s contributions to the theory of firm and externalities. In “The Nature of the Firm”, Coase (1937) highlighted the role of contracts and transaction costs in the vertical boundaries of the firm. In a later work entitled “The Problem of Social Cost” Coase (1960) examined the how the problem of externalities can be solved via bargaining without any government intervention provided the transaction costs are zero. The paper highlights the importance of defining and enforcing property rights – an aspect which continues to dominate studies attempting to link institutions and economic growth. Another key, albeit indirect, insight from Coase’s works is that institutions play a key role in determining transaction costs in markets and therefore resource distribution.

Coase’s insights were later extended and deepened by scholars such as Oliver Williamson who in the 1970s and 1980s focused on factors affecting transaction costs such as hold-up and asset specificity. Collectively, the contributions of Coase and Williamson focused on the role of transaction costs, property rights and incomplete contracts (Menard and Shirley, 2012). In his later works, Williamson was keen to develop a broader theory framework for analysing institutions. Williamson (2000) proposed a framework comprising four levels of social analysis with each level being characterized by the speed of change in various economic phenomena (norms, contracts, incentives). This framework is summarized in Table 1 below. An important feature of this framework is the interactions between the phenomena across different levels. Williamson has also pointed out that much of the work from the New Institutional Economics (NIE) relate to level 2 and level 3 in the framework. It is important to note here that one aspect of level 2 – polity – is linked to the literature on political economy and positive political science. In addition to the four levels in the framework, Williamson postulates a fifth level, namely a level zero (i.e. pre-level 1) which focuses on the human actor. Level zero deals with working material underlying embeddedness (level 1), namely the nature of the human mind/cognition and its evolutionary origins. This relates to other fields and disciplines within economics and outside it such as bounded rationality (Simon), behavioural economics (Kahneman and Tversky) and evolutionary psychology.

**Table 1: Williamson’s Framework for Institutional Analysis**

Level of Analysis	Phenomena	Speed of Change (Years)	Method of Analysis
1 - Embeddedness	Informal Institutions, Customs, Traditions, Norms, Religion	100 – 1,000	Social Theory
2 – Institutional Environment	Formal Rules of the Game: Polity, Judiciary, Constitutions, Law, Property Rights	10 – 100	Economics of Property Rights, Positive Political Theory
3 – Governance	Play of the Game: Private Ordering – aligning governance structures with transactions	1 -10	Transaction cost economics
4 - Resource Allocation and Employment	Prices and Quantities; incentive alignment	Continuous	Neo-Classical Economics

Source: Adapted from Williamson (2000)

In addition to the work of Coase and Williamson, the work of Douglass North has been important in reviving economists’ interest in institutions. North’s contribution has been to elevate the analysis of institutions to a more macro level – linking institutions to economic growth and development. During the period of the 1960s and 1970s, North’s thinking evolved from a neo-classical emphasis on the role of technological change to organizational and institutional innovation (Menard and Shirley, 2014). Subsequently, North (1990, 2005) focused on the determinants of institutions – why institutions (often inefficient) emerge, prevail and change in societies. This has led to at least two important dimensions in the analysis of institutions, namely the role of politics (or interactions involving political organizations) and perhaps even more fundamentally, informal constraints such as norms and belief systems that are shaped by cognitive factors. The latter focus on human cognition is, to some extent, consistent with Williamson’s (2000) discussions level zero analysis involving the human actor. The former focus on politics and political institutions remained important in North’s more recent work. North *et al* (2009) put forward a macro-level framework to analyse the long-term change in human societies. In their framework, there are three types of social orders in societies, namely, foraging order, limited access order (natural state) and open access order. These social orders are characterized by the degree of access to specific forms of human organizations (and hence economic resources), with open access order as being the most accessible. A key feature of their approach is the role of the elite (dominant political coalition) which finds resonance in the works of Acemoglu and Robinson.

Beyond the works of Coase, Williamson and North, studies from political economy and political science have also shaped the literature on institutional economics. As noted by Menard and Shirley (2014), these include the contributions of Mancur Olson (Collective Action), Duncan Black (Voting Theory), Anthony Downs, William Riker (Voting Theory), Kenneth Arrow (Social Choice), Gordon Tullock (Public Choice), Kenneth Shepsle and Barry Weingast. These contributions directly and indirectly influence the more recent works of institutional economics that focus on political factors.

### **Recent Institutional Economics**

A large body of literature on institutional economics this century has built on the works of Coase, Williamson, North and the political economists. This literature is very diverse. Given the plethora of sources from which institutional economics have drawn, this is not surprising. Four major approaches can be discerned in this literature.

The first approach is represented by the collective works of Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny.<sup>4</sup> This literature is characterized by its focus on legal institutions and their relationship to growth and development. A key finding of this literature is the importance of legal origins or traditions. These authors argue that legal tradition such as common law provides better protection for outside investors compared to civil law (La Porta, et al., 2008). In addition, common law is also superior to civil law in terms of contract enforcement and economic freedom. These properties of legal systems have also been linked to financial development in the law and finance literature in the works of scholars such as Thorsten Beck, Asli Demirguc-Kunt, Ross Levine and Mark J. Roe.

In addition to legal institutions, recent scholars have revisited the role of political institutions in influencing economic policies. This second approach has been labelled “New Political Economy” (NPE). Key contributors to the literature include Torsten Persson and Guido Tabellini (2000, 2003). A key finding of the literature is that electoral rules (proportional vs. majoritarian) and legislative regimes (presidential vs. parliamentary) have systematic effects on public policy outcomes such as government spending. Persson has also collaborated with Timothy Besley to examine the role of state capacity to raise tax revenues (fiscal capacity) and support markets (legal capacity) (Besley and Persson, 2009, 2010). Such capacities could be influenced by factors such as common vs. redistributive interests, cohesiveness of political institutions and resource independence (Besley and Persson, 2011).

There has been a recent resurgence in the topic of culture as an important determinant of growth– which forms the third approach. Empirical studies of the relationship between culture and economic growth date back to the 1990’s (see the survey by Adkisson, 2014). More recent work includes that of Tabellini (2010), Gorodmichenko and Roland (2010, 2011a, 2011b) and Alesina and Giuliano (2015).<sup>5</sup> The framework used by each these authors is different from that of the others. Tabellini argues that culture plays an important role as a

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<sup>4</sup> Other occasional collaborators include Simeon Djankov, Andrei Shleifer and Edward Glaeser.

<sup>5</sup> Another related literature on culture and institutions is the relationship between religion and economic growth. See Barro and McCleary (2003).

“channel of historical influence within countries” (p.678). He provided evidence on how culture is correlated to regional economic development. For Gorodmichenko and Roland, individualist culture can lead to higher levels of innovation (an important source of growth). In a more recent work, Gorodmichenko and Roland (2015) have extended their research to individualism and democratization. A key challenge of this literature has been how to define and measure culture. “Culture is a multifaceted and somewhat nebulous concept.” (Adkisson, 2014, p. 93). Tabellini focused on trust and respect for others, and confidence in the virtues of individualism whereas Gorodmichenko and Roland used measures of individualism. Adkisson (2014) surveys the problems of quantifying culture. While some institutionalists regard culture or cultural variables a part of institutions, they are more commonly regarded as separate and, therefore, a rival for institutions as an explainer of growth patterns. Interactions between culture and institutions are bi-directional and, as in the analyses of growth and multiple factors considered below, raise the issue of causality. Alesina and Giuliano (2015) examine this issue. The literature on the importance of culture is still at a nascent stage even though it has been a factor that has been discussed for a long time in sociological and historical works.

A fourth approach is the set of contributions by Acemoglu, Robinson and their co-authors. There are two strands of literature associated with these authors. The first is an empirical one which focuses on the relationship between ‘initial’ institutions established during colonial times<sup>6</sup> and long-term economic performance (Acemoglu *et al*, 2001, 2005). Institutions that are extractive (rather than participatory) have detrimental long-term effects on economic growth. This can take place through their negative effects via property rights institutions (Acemoglu and Johnson, 2005). A second strand of literature associated with Acemoglu and Robinson is more theoretical in nature. A key preoccupation of this strand has been the role of power in politics and how this affects economic growth (Acemoglu and Robinson, 2000, 2001, 2006). This takes the form of the conflict and balance of power between the elites and the poor masses (citizens) that explains dictatorship, oligarchy, democratization and democratic reversals (coups). Acemoglu, Johnson and Robinson (2005, p. 391) introduced the concept of a hierarchy of institutions. Flachaire, García-Peñalosa and Konte (2014) support this view. They find that political institutions are one of the deep determinants of growth. They set the stage in which economic institutions and other variables affect growth. Acemoglu and Robinson and co-authors have followed this up by more recent empirical work linking democracy, income per capita and economic growth (Acemoglu *et al*, 2008; Acemoglu *et al*, 2014). Many other subsequent empirical investigations have followed the method and instrumentation used by Acemoglu and Robinson and co-authors.

### **3. The Analysis of Recent Institutional Economics**

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<sup>6</sup> This line of research is itself part of an older body of economic history that considers colonialism as the main cause of underdevelopment. Shirley (2005) calls this the “Colonial Heritage” view and the developments in the work of Acemoglu and Robinson and co-authors as the “Colonial Heritage Plus” view.

## **What are institutionalists trying to explain?**

Recent institutionalists have chosen a variety of dependent variables for long-run national macroeconomic performance. Acemoglu and Robinson (2012) and Besley and Persson (2011) both try to explain differences in real incomes (“prosperity” and “poverty”) across nations at the present time, à la Adam Smith. Similarly other recent books written for a more popular audience such as Morris (2010), Norris (2012) and Hannan (2013) are devoted to the cross-country simultaneous comparisons of levels of “prosperity” or “welfare”. Others examine the vulnerability of nations to crises and volatility (Rodrik, 1999) or cross-country differences in indices of “human development” like literacy and longevity or the UNDP Human Development Index (Bardhan, 2005). The literature is, however, dominated by the study of cross-country differences in level of prosperity/income or, what is much the same thing, in rates of economic growth. We call this subject the long-run performance of nations for short. We focus on this as the dependent variable of the analysis.

## **Methods of analysis**

Recent institutionalists have used a variety of methods to demonstrate that institutions are an important or, in some cases, the main determinant of cross-countries differences in long-run national macroeconomic performance.

The most common method used is historical narrative with a comparison of economies or groups of economies with different performances and a documentation of the origin and development of those institutions which purportedly matter. For example, this is the method used by more popular book authors such as Morris (2010), Norris (2012) and Hannan (2013) who take a broad and long-term view of the relative prosperity of nations. It is also the method used by Acemoglu and Robinson (2012) though their account in this book is derived from the model and regressions developed at length in their earlier work, especially Acemoglu, Johnson and Robinson (2001).

These narratives are stimulating and revealing but they do not provide general proof of the importance of institutions relative to other factors. Case studies are *sui generis*, as Shirley (2004, p. 627) neatly put it. There is a danger too that the historical case studies may be chosen to fit the hypothesis, leaving out other case studies which do not fit as well.

Moreover, the interpretation of the history of institutions and economic growth requires detailed examination of the economic history of each case. Ogilvie and Carus (2014) have critically reviewed the interpretation of many of the cases used in historical narratives, including the Glorious Revolution, serfdom, guilds and many of other favourites of the institutionalists. They find that “...a specific institution that matters for economic growth will often not operate similarly across different societies and time periods. Private property rights, for instance, are embedded in broader institutional systems that differ greatly across societies, with the result that they will not affect growth identically everywhere.” (Ogilvie and Carus, 2014, p. 468). Detail is important. For example, in examining the role of secure property rights, it is necessary to distinguish between rights of ownership, use and transfer and between generalized and particularized variants.



A refinement of the comparative approach is a detailed comparison of pairs of countries. Acemoglu, Johnson, and Robinson (2001 and 2005) and Acemoglu and Robinson (2012) make use of a number of what they call “natural experiments” involving a pair of neighbouring economies which share many geographic features but have different histories. They begin their book with a dramatic comparison of Nogales in Sonora, Mexico with the town of the same name in Arizona. They also use North and South Korea and East and West Germany as pairs to compare. These examples are persuasive but, unfortunately, they are severely limited in number.

Acemoglu, Johnson and Robinson (2001) set out to provide a general method of testing the view that institutions matter for long-run macroeconomic performances that is rooted in modern economic modelling and econometric hypothesis testing. As a measure of current institutions they chose the variable “protection against expropriation risk”. They find a statistical association between higher quality of institutions (lower risk of appropriation of property rights) on the one hand and higher income on the other. However, they rightly point out that this could be due to reverse causation – higher incomes leading to reduced risk of appropriation - or to omitted variable(s) which might explain both variables and lead to a spurious conclusion of causation. There are fundamental problems of causality in this area of analysis. They sought a source of exogenous variation in institutions in the past that could be used as an instrument for the current institutional variables in the countries in their sample. They chose the variable “settler mortality rate” in the early days of colonisation of the modern economies. They posit that differences in this variable led to differences in early settlement experience which led to differences in settlement institutions which in turn led to differences in current institutions. Using the obtained relationship between current institutions (expropriation risk) and colonial institutions (settler mortality rates), their two-stage regression estimates find institutions to be a highly significant cause of contemporary cross-country differences in income per capita in their sample of countries.

Acemoglu and Robinson have begun a new form of “growth regression”. Other scholars have used multi-stage regressions and instrument variables in the manner of Acemoglu and Robinson. For example, Rodrik, Subramaniam and Trebbi (2004) explore the role of institutions along with geography and trade variables. In addition to the instrument of settler mortality used by Acemoglu and Robinson, they use two other instruments, the fraction of the population speaking English and Western European languages as the first languages. Rodrik, Subramaniam and Trebbi (2004, p. 154) note “if colonial experience were the key determinant of income levels, how would we account for the variation in incomes among countries that have never been colonized by Europeans.” Their alternative instrumentation enables them to expand the set of countries from 79 when using the Acemoglu-Robinson instrument to 137 countries. This instrument choice and the expanded country set confirm the “primacy” of institutions as the explanatory of growth differences among the countries. But, it should be noted that the model explains only about one half of the variation across countries in income levels

In their exploration of the relative roles of institutions and economic policies as determinants of long-run macro-economic performance, Easterly (2005), Rodriguez and Rodrik (2001) and

Rodrik, Subramaniam and Trebbi (2004) also emphasise the issue of causality. These studies see the previous attribution of economic success to policy differences as spurious. It is the result chiefly of omitted variables, namely institutions, and the mis-specification of explanatory trade policy variables.

In an expanded Acemoglu-Johnson-Robinson-style two-stage regression analysis, Bardhan (2005) considers which institutions matter most. As the dependent variable, he takes literacy, life expectancy and HDI as well as GDP per capita. As potential explanators, he goes beyond the usual focus on the rule of law that protects property rights by adding democratic political rights, a measure of state antiquity, land-locked status, ethno-linguistic fragmentation, population density as well as the Acemoglu-Johnson-Robinson variable settler mortality rates. The results are mixed. In the first-stage of the two-stage regression, ethno-linguistic fragmentation and higher population density are associated with weak political rights. Settler mortality rates are significantly related to both institutional variables, the rule of law and weak political rights. In the second stage, the two institutional variables are generally significant determinants of the dependent variables. For the social non-GDP aspects of development, an institutional variable like an index of democratic rights is a better institutional explainer than property rights institutions.

Jellema and Roland (2011) look for clusters of institutional variables that have joint effect. They consider political, judicial and cultural variables and use principal components analysis. Few institutional variables are significant on their own. The robust result they find is that political institutions of a limited executive and checks and balances together with an anti-authoritarian democratic participatory culture are what matters for long-run growth in income.

Besley and Persson (chiefly 2011 but also earlier papers) also look for clusters of variables in the cross-country data. They draw their inspiration from Adam Smith:

“Little else is required to carry a state to the highest degree of opulence from the lowest barbarism, but peace, easy taxes, and a tolerable administration of justice, all the rest being brought about by the natural course of things.” (Quoted in Besley and Persson, 2011, dated 1755 but no source given. In Smith, 1776, p. xliii, it is attributed by the editor to a lecture given by Adam Smith. )

Their analysis centres on three closely related concepts – the fiscal capacity of the state, the legal capacity of the state and political violence. The first capacity is “the necessary infrastructure – in terms of administration, monitoring and enforcement – to raise revenue from broad tax bases such as income and consumption, revenue that can be spent on income support or services to its citizens”. The second capacity is “the necessary infrastructure – in terms of courts, educated judges, and registers – to raise private incomes by providing regulation and legal services such as protection of private property rights or the enforcement of contracts.” This is a rendition of the standard appeal to the rule of law as a central institution. Political violence is internal rather than external, that is, civil war and repression. Its opposite is peaceful outcomes or peacefulness. They produce a political economy model

of the determinants of each of the three variables. Fiscal capacity, legal capacity and peacefulness each promote development and prosperity and all are measured on the unit interval. They define a Pillars of Prosperity Index as the equal-weighted sum of state capacity (itself the equal weighted sum of legal and fiscal capacity), peaceful outcomes and per capita income. This is an odd measure in that the first three components are determinants of prosperity and the last is the measure of prosperity but they find high or low values of these components are clustered.

Collier (especially 2007 but also other papers with a string of co-authors) also emphasises civil war in his analysis of the world's poorest economies – 58 countries with the bottom billion population. “Seventy three per cent of the people in the societies of the bottom billion have recently been through a civil war or are still in one.” (Collier, 2007, p.7). For the bottom billion countries, the conflict trap is only one of four traps that prevent income growth in these countries; the other three are the natural resources trap, the trap of being landlocked with bad neighbours, and the trap of poor governance in a small country. His careful analysis of the problems of these countries uses a mix of institutional and economic policy and governance and geography variables.

### **What are institutions?**

The starting point of any review of these methods of analysis of recent institutional economics must be some comment on the meaning of “institutions”. This term is not as clear as it seems at first sight. Most individual contributions have given, either explicitly or implicitly, a list of the institutions which they regard as important. Almost all recent institutionalists centre their analysis of institutions on the concepts of the rule of law and property rights. Acemoglu and Robinson (2012) distinguish between economic institutions and political institutions in their book. They list many economic institutions but highlight property rights, the law, freedom to contract and exchange. Besley and Persson (2011) focus on more general notions of fiscal capacity, state/legal capacity and peace (defined as the absence of conflict rather than wars with other nations). Rodrik (1999), Acemoglu, Johnson and Robinson (2005), Bardhan (2005) and Ogilvie and Carus (2014, Lesson 8) emphasise institutions of coordination and conflict resolution. Some include cultural institutions and human rights. One could construct a very long list of institutions. The length of this list reflects the differences in the approaches noted in Section I, some emphasising legal institutions, others political or cultural institutions.

Douglass North (1990, p. 1) began his treatise with the definition: “Institutions are the rules of the game in a society or, more formally, are the human devised constraints that shape human interaction.” He distinguishes between informal constraints – such as conventions and codes of behaviour - and formal constraints which include written laws and constitutions, judicial rules and contracts. Many institutionalists have adopted the North definition.<sup>7</sup> For example, Acemoglu and Robinson (2013, p. 75) define institutions, very sparsely, as “the rules influencing how the economy works”. Similarly, for the special problem of managing

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<sup>7</sup> Leite, Silva and Alfonso (2014, n.1) give some alternative but closely-related definitions of institutions.

common property resources, Ostrom defines institutions as the rules used by the agents tapping the common property resource (Ostrom (2005), Ostrom, Gardner and Walker (1994) and references therein). North's definition gives institutions a meaning that is different than that of its common English usage where an institution is a body or organisation with designated members or constituents. North (1990, p. 7) himself distinguishes between "institutions" and "organisations".

A difficulty with this definition is that it is extremely broad and not well-defined. A number of institutionalists have contrasted the role of institutions as a determinant of long-run economic performance with the role of policies such as tax policies, openness to international trade, overvalued exchange rates and macroeconomic policies (See especially Rodriguez and Rodrik (2001), Rodri, Subramaniam and Trebbi (2004), Easterly (2005), Rodrik (2006), Rodriguez (2007), Acemoglu, Johnson, Robinson and Thaicharoen (2003), and Acemoglu and Robinson (2013, chapter 15)). Plainly these writers do not regard "policies" as institutions. Yet policies and policy parameters such as tax rates, tariffs and fixed exchange rates are part of the rules governing an economic system. Furthermore, North (1990, p. 1), in his definition of institutions, says that institutions "structure incentives in human exchange, whether political, social or economic." Following North, subsequent institutionalists emphasise the incentives role of institutions.

Easterly (2005, p. 1033) bases the distinction between "institutions" and "policies" on the argument that institutions such as property rights, rule of law, legal traditions, trust between individuals, democratic accountability of governments and human rights are "deep-seated" in contrast to "policies" which can be changed by "stroke of the pen" reforms. This assertion should be regarded as a testable hypothesis rather than an unquestionable fact. Many policies are very hard to change politically as any economist who has worked on the reform of a tax system or the reform of national barriers to international trade will testify. In a similar way Besley and Persson (2011, p. 12) note that "one cornerstone of our framework is to distinguish between policymaking and institution building." They note that the capacity of the state is built up over time and current state capacity constrains the policies pursued by governments. Rodrik, Subramaniam and Trebbi (2004, p. 156) note, wisely, that "the distinction between institutions and policies is murky as these examples illustrate. The reforms that Japan, South Korea, and China undertook were policy innovations that eventually resulted in a fundamental change in the institution underpinning of their economies." They then try to distinguish between policy and institutions by regarding the former as a flow variable and the latter as a stock variable: "We can view institutions as the cumulative outcome of past policy outcomes. (Rodrik, Subramaniam and Trebbi, 2004, p.156). This restricts the role of policies to one of determining institutions. It is not a view of institution building which conforms to other attempts to endogenise institutions such as the Acemoglu and Robinson notion of the hierarchy of institutions.

The basic problem with this binary division is that institutions, when defined to exclude policies, and policies jointly determine incentives. To take just one example, taxes on incomes earned by persons (either individuals or corporations or other legal persons) interact with tax-related institutions such as the monitoring of tax avoidance and the enforcement of

tax liabilities by courts to jointly determine the effective tax rates paid by persons. To determine incentives one must consider both “institutions” and “policies” together.

### **Measuring institutional variables**

Measuring institutions is difficult without doubt.<sup>8</sup> Many writers do not try. Ogilvie and Carus (2014, p. 489) complain that “...current institutional labels used in the analysis of growth assume those institutions to be present or absent, with no gradations in between,” that is, they use binary variables. This applies, for example, to institutions that supposedly guarantee property rights or enforce contracts and those that do not. They regard the need to devise measures of institutions which provide variations in intensity as one of the challenges of future research.

However, one feature of recent institutional economics is the attempt to develop institutional variables to be used as explanatory variables in empirical cross-country studies. Jellema and Roland (2011, Data Appendix) list a number of institutional variables and their specification, most of them relating to the political or justice systems. They comment (2011, p. 108) that

“First of all, measurement issues loom large. Most cross-country analyses of the effects of institutions on economic performance use summary measures created by an ad hoc (and usually idiosyncratic) weighting of several institution or categories of institutions. These aggregates are often based on subjective evaluation, contain significant noise, are suspiciously volatile, and are likely to be biased or contaminated by perceptions of a country’s economic performance.”

Shirley (2005, p. 627) also criticises the use of aggregate institutional variables.

When some variable is used to measure the rule of law or property rights, the choice is obviously difficult and may be subject to criticism. In their hugely influential work, Acemoglu, Johnson and Robinson (2001, 2005) measure property rights by a proxy variable, the “risk of expropriation”, which is a measure of the risk of expropriation for private foreign investors only, excluding domestic investors. Bardhan (2005) uses a composite index of the rule of law with several components taken from the World Bank’s Worldwide Governance Indicators.

Another example of measurement problems is the key instrumental variable, the settler mortality rate, used by Acemoglu, Johnson and Robinson (2001). They use the mortality rate of European-born soldiers, bishops and sailors in the settlements before 1850. This variable has been used by many other studies subsequently. It is a constructed composite of the type criticised by Jellema and Rolland, and Shirley. It has been comprehensively criticised by Albouy (2012). Only 28 of the 64 countries in their sample have mortality rates that originate within their borders; the other 36 countries are assigned rates based on conjectures made by the authors as to the similarity of disease environments. For the 28 countries, the mortality rates are a mixture of rates for different soldier and labourer populations and Catholic bishops

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<sup>8</sup> North (1990, p. 107) himself avers that “we cannot see, feel, touch or even measure institutions.”

and none are for settlers themselves. Albouy concludes “this comment argues that there are several reasons to doubt the reliability and comparability of their European settler mortality rates and the conclusions that depend on them.” (p. 3060) In reply, Acemoglu, Johnson and Robinson (2012) claim that their estimates of this variable are robust and corroborated by other historical records and therefore reliable.

The same problems of measurement have arisen with respect to variables used to represent “policies”. In his lengthy critique of national policies as a determinant of economic growth, Easterly (2005, p. 1037) uses the trade ratio (Exports+Imports/GDP) as the variable to represent trade openness. Rodrik, Subramaniam and Trebbi (2004) and other studies also use this variable. It is well-known to trade economists that this empirical ratio is quite deficient as a measure of trade policy stance since it combines two unrelated sets of influences – on is trade policy in terms of government-determined border barriers to trade with other countries and the other is physical or geographic determinants of trade flows such as resource endowments and distance from major markets.<sup>9</sup> There are numerous measures of average tariffs or, more generally, the average level of tariff and non-tariff barriers which have been compiled by the WTO, World Bank and other organisation and which should be used in place of the trade ratio. Rodriguez and Rodrik (2001) use these variables. Even better, since 2000, theoretically-correct Trade Restrictiveness Indexes have become available; see Anderson and Neary (2005), though none of these indexes have as yet been used to our knowledge in cross sectional-studies of long-run national economic performance. Similarly, the choice of a measure of currency overvaluation, as in Easterly (2005) and Acemoglu, Johnson, Robinson and Thaicharoen (2003), is very contentious as shown by the vast financial economics literature on purchasing power parity exchange rates and real effective exchange rates. In his more recent work, Rodrik (2007, 2008 and 2014) has emphasised a different list of “second-best” policy strategies which have been used successfully in his view to promote industrialization and industrial transformation in Asian economies.

There is still a lot of noise in these variables but the quality of institutional indicators is improving.

### **Are institutions constant or constantly evolving?**

North (1990, chapter 10) argued that institutions are generally “stable” over time, changing only in response to major changes in relative prices. Other post-North institutionalists also argue that institutions are generally “persistent” over time (Acemoglu, Johnson and Robinson 2001, p. 1376 and 2005, p. 392) or “deep-rooted” (Easterly (2005) or “by their very nature deeply embedded in society” (Rodrik, 2006, p. 979).

On the other hand, a substantial number of institutionalists have emphasised the adaptability of institutions. The political economist who shared the 2009 Nobel Prize in Economics with Oliver Williamson, Elinor Ostrom greatly influenced the analysis of institutions which govern common property resources such as fisheries, oilfields or grazing land. For this

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<sup>9</sup> Lloyd and Maclaren (2002) present alternative measures of trade openness..

subset of institutions, she showed how institutions adapt to the special circumstances of each common property resource so that they could be managed by collective action of the private agents using the resource. (See especially, Ostrom (2005) and Ostrom, Gardner and Walker (1994) and references therein). Subsequently she has developed an institutional analysis and development framework (called IAD) for the analysis of institutional change. In this analysis institutions are viewed as rules in the manner of North but here they are devised by the parties. She views institutional change as an evolutionary process using trial and experimentation.

Harper (2014) had developed the elements of an evolutionary theory of property rights, this time for property rights or rules created and granted by the state to regulate innovation and entrepreneurship. Entrepreneurs bring about changes in intellectual property rights systems as markets and technologies change. In a broadly parallel way, writing an obituary article, Nicita (2014) has reinterpreted the seminal work of Coase (which has been subject to a large number of interpretations). He seeks a general theory of institutions based on the role of transactions costs in defining and bargaining over property rights. As transaction costs vary over time and place, he develops a theory of institutional “moving equilibrium”.

Change in institutions over the period of a study pose severe problems for analysing the role of institutions. At what time in the sample period do we examine the institutions and how do we measure institutional change? If institutions do change over time, the econometric procedure of instrumenting contemporary institutions by reference to an old historical institution, which has been used by many empirical studies of economic growth, does not hold (Bardhan, 2005, p. 511).

### **Patterns of growth in the world economy**

To assess the analysis of cross-country differences in growth which the institutionalists and others are seeking to explain, it is helpful to look at the actual growth record of countries in the world economy.

First, a little formality is useful. Let  $P_i(T)$  be the level of Prosperity, however measured, at time  $T$  for country  $i \in S$  where  $S$  is the sample set of countries. The distribution of these levels among the set of countries at any time is what we are seeking to explain. Now choose some initial starting point in past time,  $t = 0$ . For each country,

$$P_i(T) = P_i(0)\prod_t (1+r_{it}) = P_i(0)\prod_t (1+r_i) = P_i(0)(1+r_i)^T \quad (1)$$

where  $r_{it}$  is the actual annual rate of growth in year  $t$  and  $r_i$  is the rate of growth which if maintained at a constant rate from time  $t=0$  to  $t=T$  will reproduce the current level of prosperity in the country. If we compare the levels of current prosperity across the countries and chose some common starting point, then the ordering of countries by current level of prosperity depends on two variables, the initial level of prosperity in each country,  $P_i(0)$ , and its compound rate of growth over the interval  $(T-0)$ ,  $r_i$ . When one goes back a century or more, the ordering by prosperity is essentially the ordering by long-term growth rates.

Much of the literature is concerned with comparing relative levels of prosperity at some time. In particular, some authors compare the current levels of prosperity of certain countries relative to that in the US. Further, for some country  $i \neq \text{US}$  and the US, this relativity can be compared with the same relativity at some date in the past. Taking some interval of time  $T$ , we have, from Equation (1),

$$\begin{aligned} \{P_i(T)/P_{US}(T)\}/\{P_i(0)/P_{US}(0)\} &= \{P_i(T)/P_i(0)\}/\{P_{US}(T)/P_{US}(0)\} \\ &= (1+r_i)^T/(1+r_{us})^T \end{aligned} \quad (2)$$

$\nearrow$  as  $r_i/r_{us}$

This ratio depends solely on the two compound rates of growth over the time interval. The per capita income of a country converges to (diverges from) that of the US over a period of time if and only if it grows at a faster (slower) rate than the US. Thus, explaining the differences in current levels of prosperity is much the same as explaining the differences in their long-term (average) rates of growth.

Now this relationship in equation (1) is merely an identity, an arithmetic relation, but it has a number of uses. It shifts the analysis from one-period levels of prosperity to the analysis of rates of growth over a period of time. It also forces us to choose some precise starting point and end point for the sample.

This last choice is not a trivial matter for a little reflection on the examples provided by authors shows that they are often vague about the starting points which cause the time paths of nations' levels of prosperity to diverge; for example, Acemoglu and Robinson (2005 and 2013). It is clear that Acemoglu and Robinson have a long period in mind. In discussing the pivotal history of the rule of law in England, they go back to the turning point known as the Glorious Revolution of 1688 and even before that. Many other examples taken from the US, Mexico and many other countries go back one or two or more centuries to find the roots of the institutions that explain contemporary prosperity or poverty.

From a long-term perspective, the pattern of annual rates of growth of countries actually observed in the world economy exhibits two features; first, annual growth rates are highly variable, and second, there is convergence of income levels among some countries.

Variability is borne out by long-run growth statistics. In a much-quoted paper, Pritchett and Summers (2014) examine long-term growth patterns in the world economy since 1950. As the measure of output, they use the series for GDP in PPP terms from Penn World Tables Version 8.0, which has 167 countries in the database. They find that country growth rates are not persistent over time. Moreover, "Although one might have thought that most of long horizon differences were due to the existence of slow and fast growing countries (e.g. Argentina grows slow and Japan grows fast) – the opposite is true and nearly all growth variation is due to differences within countries over time." (Pritchett and Summers, 2014, p. 5)



Second, there is convergence with a tendency for Developing Economies to exhibit faster growth rates than the Developed Economies. This was noted by the World Bank Commission on Growth and Development (World Bank, 2008 and Michael Spence, 2011). That is, from equation (2), despite within-country variability of growth rates in all countries, there are sufficient differences in the average rates of growth between some countries over long periods of time to produce convergence. There are two general exceptions to convergence of Developing Countries. First, convergence has not applied to the lowest-income group of countries, as noted by Collier, 2007. Second, there is a failure of countries which have progressed from low-income to middle-income status to progress further to high-income status. This has become known as “the middle income trap”; see Eichengreen, Park and Shin (2013).

We explore these growth patterns further by examining the record in groups of countries which are of particular interest. First, Figure 1 shows the convergence of the BRIC-3 countries, which are the more important emerging Developing Countries, and the Major Developed Economies. The BRIC-3 are China, India and Brazil but not Russia for which there are no statistics in these series for the period 1950 to 1989. The Major Developed Economies are the USA plus the EC-5 (the original EC-6 less Germany for which there are no statistics in the series over the period 1950 to 1969) plus the UK and Japan. For the period 1950 to 2010, we have charted the series of average real GDP per capita in PPP terms<sup>10</sup> of the Major Developed Economies and the same average per capita income of the BRIC-3. This period is one of stability in terms of world governance as the major Bretton Woods multilateral institutions which have set the rules for international trade and foreign exchange markets have been constant, and in terms of the absence of major many-country wars. The income axis is in logarithms and, consequently, the slope represents the rate of growth of per capita income at any point. Chinese growth accelerated soon after the introduction of the Open Door policy in 1979 and India since about 2000 with the Brazilian growth being much steadier.

**[Figure 1. Convergence between BRIC-3 and Developed Economies-8]**

This figure also shows that the growth rate of the US economy has slumped since about 1990 and particularly since 2000. Similarly, the European per capita incomes have grown very slowly since about 2000 (“Eurosclerosis”). The growth rate in Japan slowed dramatically around 1990. Thus for the last 2½ decades the growth rates in the aggregate of the major Developed Economies have slowed. On the other hand, the growth rates have accelerated in the large Emerging Economies, the BRICs-3. (Data for Russia in these Penn World Table

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<sup>10</sup> We have used data series from Penn World Tables Version 7.1 rather than Penn World Tables Version 8.1, which became available in April 2015, because the Version 7.1 reports series of the income levels of countries relative to those in the US. In any case, the 8.1 series extends the period by only one more year.

series is available only from 1990.) The average per capita real GDP of the BRICS-3 rose by more than 10 times over the period from 1952 to 2010. In contrast, the average per capita real GDP of the DC-9 rose by less than 4 times.

Another group of countries of particular interest are the East Asian Economies. Many of them have experienced rapid growth. From around 1970 the four Asian “tiger” Countries (Hong Kong, Singapore, Korea and Taiwan) experienced rapid growth. Then rapid growth appeared in many other countries in East Asia. The World Bank (1993) study of *The East Asian Miracle* identified eight fast-growing or “high-performing” economies over the period 1960 to 1985; these were Japan, the four Asian tigers, and Indonesia, Malaysia and Thailand. Rapid growth was identified as a sustained growth in real GNP per capita at more than 5 per cent per annum.

Some other countries in Asia, Central Asia and some in Latin America and a few in Africa have also experienced rapid growth. The annual rate of growth of rapidly-growing economies had itself tended to increase until the onset of the Global Financial Crisis.

Thus, convergence, where it has occurred, has been due both to a marked slow-down in the rates of growth of major Developed Countries and to a marked long-term acceleration in the rates of growth of middle-income Developing Countries. These changes in per capita income performance amount to a profound change in the world economy in the last 30 years.

### **Some implications of growth variability and convergence**

This pattern of variability in growth rates and convergence raises several major difficulties for the analysis provided by those who argue that institutions are the main determinant of cross-country differences in prosperity or growth rates.

First, the convergence observed in the world economy has changed the relativities of the “prosperity” ordering greatly in the last 3 or 4 decades. Many writers, such as Acemoglu, Johnson and Robinson, treat the income relativities as if they are stable. Easterly observes that “The correlation of per capita income in 1960 with per capita income in 1999 is 0.87. Most of the countries’ relative performance is explained by the point they had already reached by 1960.”(p. 1033).

Fortuitously the Penn World Tables 7.1 produces series of the PPP Converted GDP Per Capita Relative to the United States (series y) from 1950 to 2010. These show big changes in the per capita income of some countries relative to the US, especially in Asia. The relative incomes of the 4 Asian NICs have risen greatly since the early 1970s. More recently, this change has affected the relative incomes of China and India, the two most populous economies in the world relative to the United States. In 1960, the year chosen by Easterly, the China Series 1 y series was 2.1 per cent of that in the US (5.0 per cent for Series 2), in 2000 these had risen to 7.0 (7.8) and by 2010 to 17.5 (18.9). For India, the figure in 1960 was 4.7 per cent, that in 2000 was 4.9 per cent and that in 2010 was 8.6 per cent. Although less dramatic than the case of China, this is still a big change in relative incomes. Figure 2

shows the change in relative per capita income for 10 selected rapidly-growing Asian countries. For these countries, the correlation observed by Easterly does not fit.

**[Figure 2. Per Capita Incomes Relative to the US]**

It is notable that some of the studies attributing the main differences in per capita income to institutions include in their selection of countries few of the countries that have experienced large increases in per capita incomes relative to that of the US. For example, Acemoglu, Johnson and Robinson (2001) have 64 countries in their sample of countries which were colonized. They include only 5 of the 10 countries illustrated in Figure 2, omitting China, Korea, Taiwan, Thailand and Kazakhstan. For the poor countries with low incomes relative to those in the US and other rich countries, their country selection is dominated by African and Latin American countries that have not been among the growing number of fast-growing Developing Countries. Their sample also omits more than 20 contemporary countries that are “transition” economies. This omission is notable as these states have undergone a fundamental change in institutions. See below.

How do we explain the performance of those Asian and non-Asian economies which have improved greatly relative to the US? Have institutions really persisted in these countries or have they been adapted to promote growth? The analysis of this question is severely handicapped by the absence of key long-term time series of institutional variables that allow variations in the magnitude of the institutional variables and of examination of the hypothesis that institutions are really constant over time. If it is not change in institutions, what other factor or factors explains these changes in relative performance?

Some of the explanation of changed relativities lies with the US economy as its growth rate has decelerated. Consider the US economy in the 20<sup>th</sup> century. Acemoglu and Robinson and others such as the writers who aim at a more popular audience laud the institutions of the US, its freedoms to choose to work, innovate, invest, etc. The US was a high performer in the prosperity stakes for most of the 20<sup>th</sup> century and this led it to be the richest (and largest) economy after the Second World War. But its growth rate has slumped since 2000. Yet, at first glance at least, the institutions of the US have remained remarkably constant throughout the 20<sup>th</sup> and 21<sup>st</sup> centuries. This is partly due to a constitution which embeds many freedoms and is difficult to change and partly, one might conjecture, to a high degree of policy conservatism in the US. Whatever the cause, the performance slump seems difficult to explain in terms of a level/growth theory that puts emphasis on institutions. Many US economists blame the US decline down the prosperity ladder on special circumstance relating to a productivity slowdown since the 1990s and to the GFC, which are expected to pass.

On the other hand, institutions may not persist. Ferguson (2013, chapters 2 and 3) states “Evidence that the United States is suffering some kind of institutional loss of competitiveness can be found...” (p. 100). He identifies some changes in financial regulation

and law enforcement. But these do not seem convincing to explain such a huge shift in the relative rate of growth.

Second in the list of difficulties posed by the variability of growth rates and convergence, the US, Japanese and EC economies have all experienced marked growth slowdowns since the onset of the Global Financial Crisis. (See Figure 3.) This suggests there may be general factors at work in the world economy. But what are they?

### **[Figure 3. Real GDP Per Capita]**

Third, there are many examples of economies that enjoyed a period of rapid growth and then experienced a pronounced slowdown with little or no growth for a long period. These are mostly Developing economies. Pritchett and Summers (2014) find that “Regression to the mean is that single most robust and empirical relevant fact about cross-national growth rates”. Episodes of super-rapid growth tend to be of short duration and end in deceleration back towards the world average growth rate. What explains discontinued rapid growth? Eichengreen, Park and Shin (2013) document slowdowns of two percentage points or more. There were 12 countries which exhibited such slowdowns between the decades of the 1990s and the 2000s. Non-persistence of growth rates makes explanation of cross-country differences much more difficult, whether in terms of institutions or other variables. For the period from 1960 to 1990, Rodrik (1999) offers an institutionalist explanation for growth slowdowns in terms of external shocks interacting with social conflict and weak institutions of conflict management. This explanation does not seem to apply to the more recent cases of Japan and Thailand, where the growth problems are home-grown. For the period since 1990, Eichengreen, Park and Shin (2013) emphasise the importance of moving up the technology ladder to avoid slowdowns.

Fourth, there is a large group of contemporary economies, the “transition” economies, which have very definitely experienced huge and fundamental changes in institutions. There are more than 20 of these: former republics of the USSR (including Russia), East European countries that were occupied by the Soviet Union, states formed from the break-up of Yugoslavia and other Communist states such as Albania, Vietnam, China and Cuba. They have, to varying degrees, moved from Communist institutions to market-based institutions. This group would seem to be a fertile ground for testing hypotheses on the importance of institutions. The results are very mixed. Some have experienced rapid growth and a few are in the set of fast-growing countries but some have not had rapid growth.

The case of the Chinese economy has received a lot of attention because of its exceptionally rapid growth and its consequential emergence as the world’s second largest economy. In the context of the patterns of growth rates observed above, the outstanding feature of the Chinese economy is that it has maintained a high growth rate without interruption since 1980. Thus, it

is a notable exception to the general rule observed by Pritchett and Summers (2014) that period of super-rapid growth rate tend to be of short duration.<sup>11</sup>

The post-1979 Open Door take-off occurred in a period that experienced a quite fundamental switch of institutions and policies. In relation to institutions, private property rights replaced the communal ownership of land and other resources, in both agriculture and industry. Institutional changes allowed the establishment of markets: for example, stock exchanges were established in Shanghai and Shenzhen in the early 1990s, and the household registration system which had curtailed rural-urban migration of labour was relaxed. However, the rule of law continues to operate very differently than in Western countries; contracts are difficult to enforce, intellectual property rights are frequently violated and corruption is widespread. There have been huge changes in policies too as the Chinese economy has been opened up with respect to goods trade, mainly as a result of the Chinese accession to the WTO in 2000 and its adoption of the WTO's trade rules. Opening also included the relaxation of restrictions on foreign direct investments, first by permitting tightly-controlled joint ventures and later other forms of foreign direct investment. Other policy changes have applied to state-owned enterprises and indeed all parts of the economy. Policies continue to change. These have been documented by economists based in the West; see, for example, the recent books by Wao, Lu, Sachs and Wen (2012) and Garnaut, Fang and Song (2013), especially Perkins (2013).

There is an emerging literature on the Chinese economic performance written by home-based Chinese authors. Two notable recent books are Zhang (2012) and Lin (2014).<sup>12</sup> These books have a very different flavour from the Western literature. They pay scant attention to institutional change; one exception is the recognition of the need for improved corporate governance of state-owned enterprises (Lin, 2014, chapters 9-11). Both argue that the Chinese phenomenon calls for a new growth model or paradigm. Lin emphasises the importance of technological change, mostly older vintage technologies imported from high-technology Developed Countries, over resource allocation. Because much of technological change is capital-embodied, the rate of capital accumulation is also important. He also emphasises Chinese-style entrepreneurship. Zhang emphasises the importance of culture and a strong pro-development (and often interventionist) state. These views are the vanguard of a

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<sup>11</sup> This makes the following observation by (Acemoglu and Robinson, 2013, p. 151) surprising:

“China under the rule of the Communist Party is another example of society experiencing growth under extractive institutions and is similarly unlikely to generate sustained growth unless it undergoes a fundamental political transformation towards inclusive political institutions.”

In their view, the very rapid growth over more than 35 years– from the introduction of the Open Door Policy in 1979 - is not long enough to be “sustained”. This is not a credible interpretation of the Chinese record. From 1980 to 2010, a period of 30 years, China achieved an average compound rate of growth of more than eight per cent. This means, its GDP per capita has increased by a factor of about 10. It took the US 80-100 years to achieve a 10-fold increase in real GDP per capita.

<sup>12</sup> Lin, now at Beijing University, has a University of Chicago PhD in Economics and is a former Chief Economist and Senior Vice-President of the World Bank whereas Zhang is a professor of international relations at Fudan University.

literature that challenges Western analyses of the Chinese growth performance. In the big global picture, they challenge the views of both institutionalists and others as to the causes of economic growth.

While Russia has received much less attention than China in the literature on institutions and economic growth, Kirdina (2014 and references therein) has developed a model of institutions and economic development. This is based on two polar opposite matrices of institutions, X and Y, in the economic, political and ideological spheres. She calls it the “X & Y theory”. In the economic sphere, these contrast the institutions of a highly regulated economy in the X matrix with those of the “market economy” in the Y matrix. It involves a balancing of basic “historically stable” institutions with the development of institutions appropriate to the contemporary economy. As a home-grown Russian model, it is another attempt to develop a theory of institutions for a rapidly changing transition economy with a distinct history.

Perhaps there is a global mechanism of institutional catch-up going on.

### **The relative contribution of institutions to long-run economic performance**

The key question arising from this survey of the recent literature on institutional economics analysis of the long-run performance of nations is whether “institutions” are a major factor, or even the main factor, explaining cross-country differences in performance. The focus here must be on the subset of post-2000 papers reviewed here which have used large datasets and run regressions, which include institutional variables, to ascertain the main explanators of these differences. This is the latest phase in the history of “growth regressions”. It follows the early phase which centred upon state variables such as the stock of physical or human capital and policy variables suggested by neoclassical growth theory (see, for example, Barro and Sala-i-Martin, 1995).

The growth regression literature, in both the earlier and the later phases, has shown that the explanators or “factors” which explain growth patterns are sensitive to what hypothesised variables are included, the particular measures used to represent these variables and other aspects of the specification of models. For the recent institutionalist “growth regression” literature, we have reported criticism of some of the measures used to represent institutions in these regressions and the use of particular instrumental variables. Some of those whose work has been severely criticised by the new institutionalists have struck back with new regressions that purport to show the continued importance of non-institution variables; for example, McCord and Sachs (2013) and Estevardeordal and Taylor (2013) have reasserted the importance of geography and of trade policy respectively.

Doppelhofer, Miller and Sala-i-Martin (2000) examined the methodological problems of finding the variables which are “truly” related to growth when there are many models and potential regressors. Using a Bayesian approach, they find that one third of the 32 variables they tested have robust partial correlation with long-run growth. Their variables included measures of human capital and trade sector policy measures such as measures of openness, importance of primary exports and real exchange rate distortions, and some culture variables

but only two variables, civil liberties and the degree of capitalism, which might be considered as institutional variables. The task is to sort out the relationships between factors which are robustly connected to growth in some way.

#### **4. Conclusion**

Recent analyses of the long-run performance of nations have made a major contribution to the analysis of the causes of economic growth. They have reminded us that institutions matter. They have constructed models of growth with institutional variables and shown the importance of pursuing causality and endogenised the institutional variables themselves.

There is now no doubt that institutions are an important determinant of the long-run growth/prosperity performance of economies. This is shown dramatically by the pair comparisons. But whether they are the main determinant of cross-country differences in prosperity/growth, as several leading institutionalists have claimed, is problematical.

We have identified a number of problems and issues with the institutionalists' analyses. Institutions change over time and vary over space. The measurement of institutional variables, especially over time, is often rudimentary. The distinction between institutions and policies is arbitrary and artificial in that it is their combined effects on incentives which matter for individual choices. The sample of countries in many empirical studies has been restricted.

We have also observed that the pattern of variability in annual growth rates raises several major difficulties for the analysis of long run performance and its attribution to institutions or other factors. It is not sufficient to look at cross- country differences at one point of time. Relative levels of income/prosperity have changed markedly for some countries in recent years. One must also explain why the growth rates have accelerated in some economies and decelerated in others and why in some economies they have accelerated then decelerated, when institutions are supposedly stable over time.

Consequently, the importance of institutions as a determinant of the long-run growth performance of nations relative to policy reforms and other factors such as geography and culture is still a wide open question.

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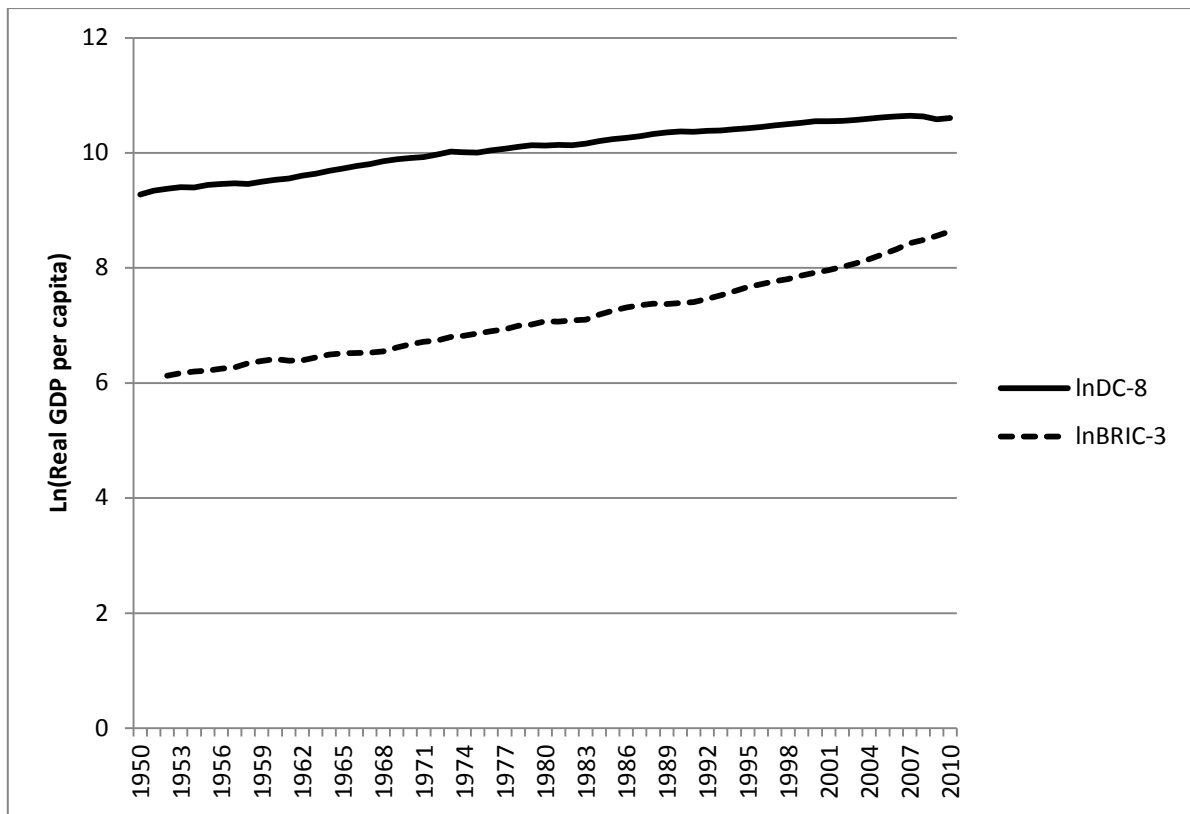
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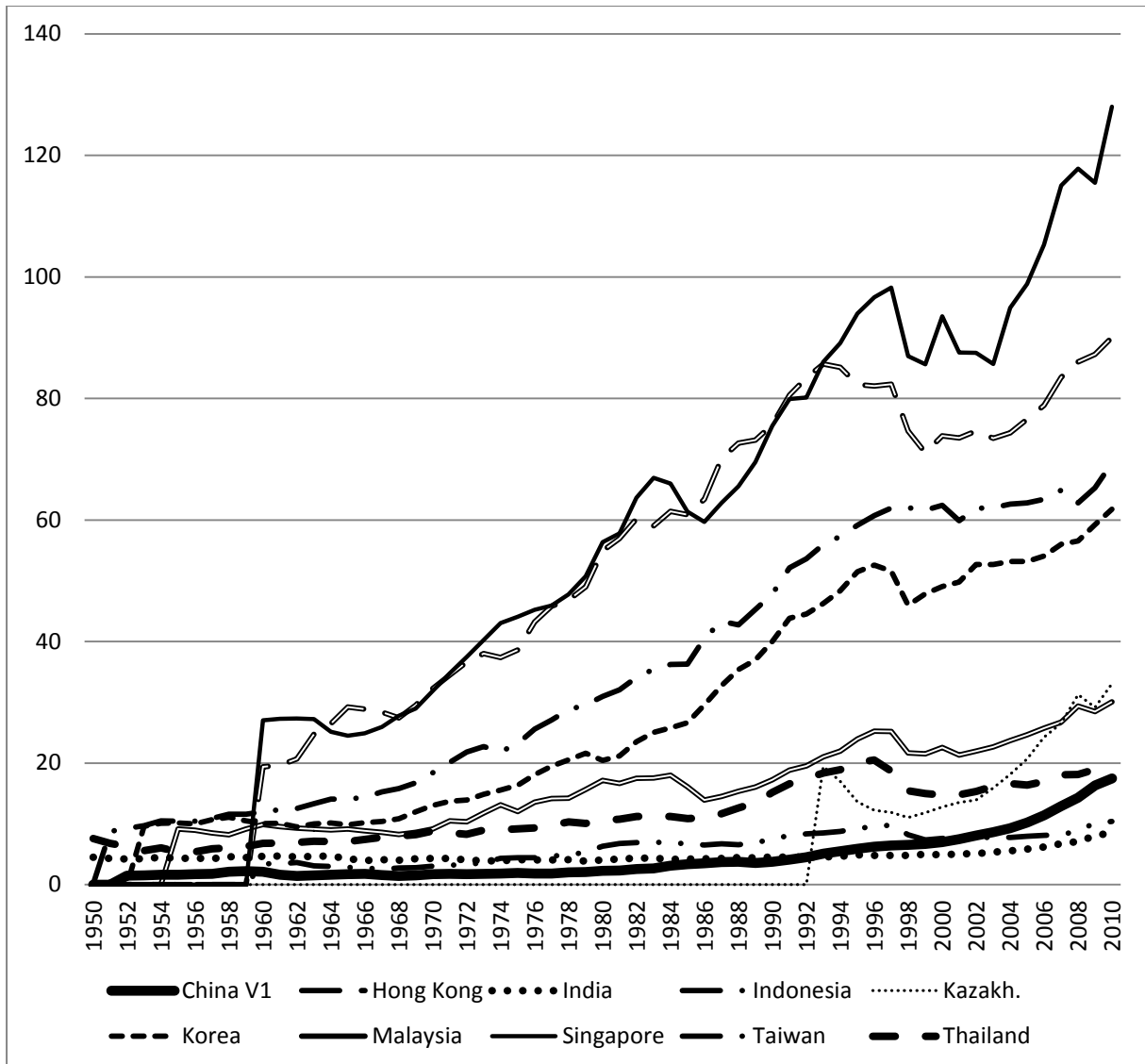
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**Figure 1. Convergence between BRIC-3 and Developed Economies-8**



Source: Penn World Table

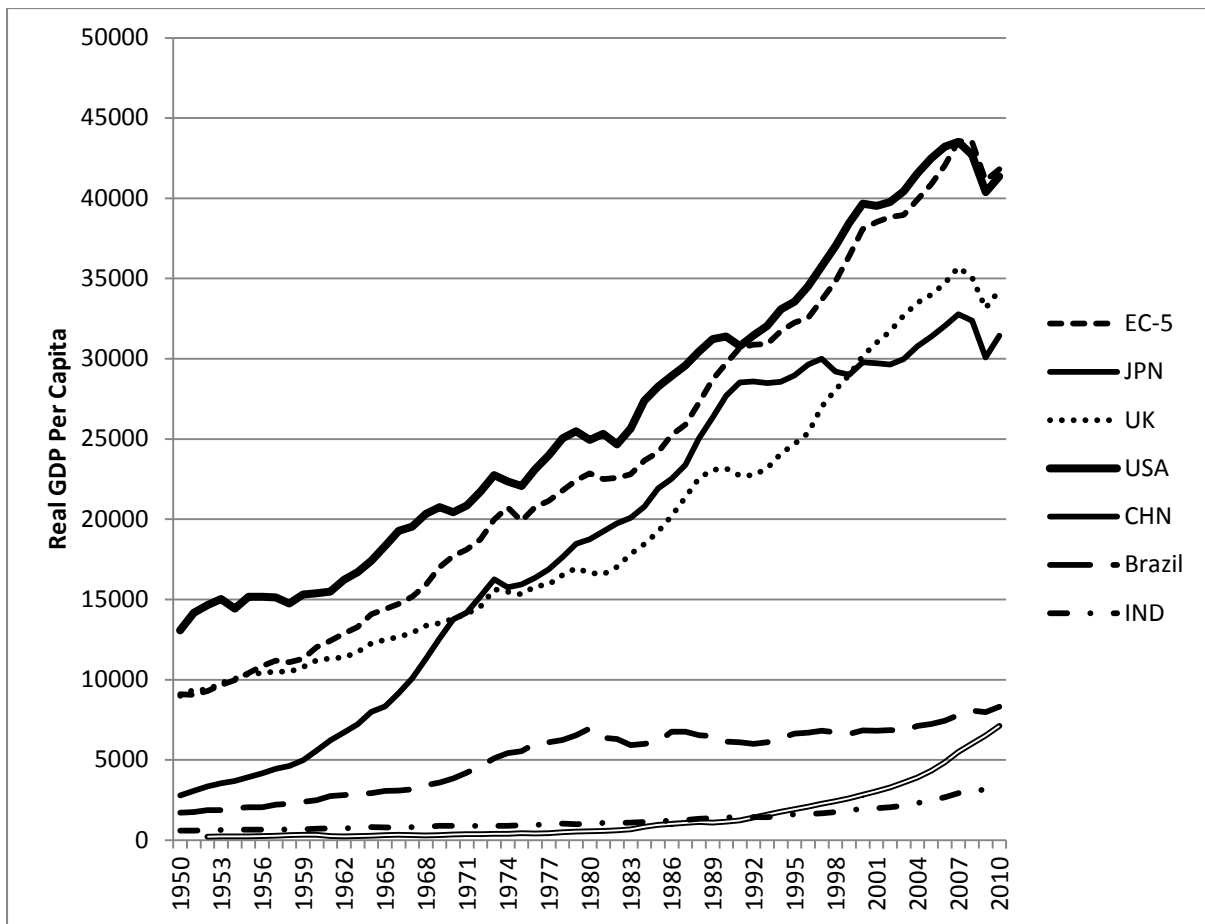
**Figure 2. Per Capita Incomes Relative to the US**



Source: Penn World Table



Figure 3. Real GDP Per Capita



Source: Penn World Table