

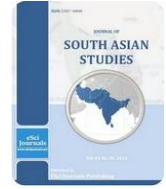


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WHAT DRIVES THE QUALITY OF INSTITUTIONS IN ASIAN ECONOMIES? DIRECTIONS FOR ECONOMIC REFORMS

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ABSTRACT

This study constructs an indicator of institutional quality for eleven Asian countries using exploratory factor analysis and subsequently identifies its possible determinants. We employed the data from ICRG, WDI and DPI for the period from 1984 to 2010. Our panel data regression analysis reveals an increase in the efficiency of the tax system, income per capita, international openness, adult literacy rate along with a decrease in the level of national indebtedness and military spending have the potential to improve the institutional quality of these countries. Though, quantile analysis shows that an increase in income per capita, tax collection and a decrease in military spending have better potential to enhance the institutional quality in Bangladesh, India, Sri Lanka, Pakistan, Philippines, and Thailand; whereas an increase in adult literacy rate, international openness, tax collection and a decrease in indebtedness have better potential to improve the institutional quality in Singapore, South Korea, Malaysia, Indonesia, and China. A striking fact is that adult literacy rate, a proxy for the education system, does not have any potential to impact the institutional quality of the above-mentioned first set of countries. This requires that such countries should re-examine their education policies and systems to better serve the societal needs.

Keywords: Asian Economies, Institutional Quality, Reforms.

JEL Classification: O43, O53, P48.

INTRODUCTION

The evidence is still inconclusive about determinants of ever-increasing gaps in productivity and income per capita across the world. One line of the argument emphasizes the strategic role of institutions in explaining these differences in the nation's wealth (Smith, 1776; Acemoglu *et al.*, 2001; 2002; Hall & Jones, 1999). Institutions are defined as: *"The rules of the game in society or, more formally, are the humanly devised constraints that shape human interaction"* (North, 1990). Institutions can be both formal (constitution, laws, rules, and regulations) and informal (norms, ethics, beliefs, customs, and values) (Tabellini, 2010).

Good institutions play a pivotal role in lowering transaction costs, ensuring contract enforcement, protecting property rights and enhancing productivity

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while providing a level playing field to economic agents. There is a considerable empirical evidence that the institutions of the developed world have played a crucial role in their voyage to higher levels of growth [see e.g. relationship between economic freedom, democracy and economic growth (Barro, 1996; Minier, 1998) property rights and economic growth (North and Weingast 1989; North, 1990) the relationship between inequality and political instability on growth (Lee and Roemer 1998; Alesina & Rodrik, 1994; Barro, 2000) social capability, trust and economic growth (Knack & Keefer, 1995, 1997a, 1997b; Hall & Jones, 1997, 1999; Zak & Knack, 2001)]. These studies show that sound, credible and efficient institutional framework is an imperative precondition for economic activity and growth. Though it is hard to categorize an institution as good or bad, but the literature does point to some of the characteristics of institutions, which are generally not desirable. Sobhee (2016) refers to poor quality of institutions as: *"Political*

instability, infringements of civilian rights, unfair elections and electoral processes, lack of freedom for the media, corruption and, amongst others, poorly managed governmental organizations”.

Various types of institutions—economic, political, legal, and social—matter for the economic success and failure of the nations. Institutions of a country facilitate economic growth by incentivizing investment, creation and diffusion of technology, and development of human capital (Acemoglu, 2008). Opposite scenario could be that country’s institutions may discourage such activities and as a result leading the economy to stagnation. Conversely, Chang (2006) is of the view that historical study of the evolution of institutions in the developed world reveals that much of the institutions being considered necessary for economic growth emerged after not before development process in the developed economies. This approach is broadly in line with the discussion on the direction of causal relation between institutions and economic growth (Glaeser *et al.*, 2004) but this argument does not imply that any effort for improving the institutional quality a priori to attain a certain level of development is worthless. Gerschenkron (1962) has pointed out that there is an advantage of backwardness; to us, its interpretation is that backward countries can learn from the experiences of the developed world and could develop certain appropriate institutions beforehand rather than the development induces them. Therefore, there is a logical quest; how to develop good institutions?

Aforementioned studies enhance our understanding about the importance of institutions for economic development but many of the studies barely identify the drivers of institutional quality, particularly in the Asian context. Asian countries have diverse scenarios in terms of current state of economic growth, institutional architecture, socio-cultural norms, military’s role in politics and colonial legacy. Following this pursuit, there is two premier focus of this study: i) to construct a comprehensive indicator of institutional quality for some Asian countries, ii) to identify important factors those could have serious implications on the institutional quality of this region. Literature review suggests that income per capita, international openness, educational level of the population, the efficiency of the tax system and foreign aid/debt, are the instrumental determinants of the quality of institutions (Siba, 2008; Alonso & Garcimartin, 2013). To this end, we are going to add

another dimension i.e. military’s influence on the institutions of the respective countries as most of the countries in our sample have a strong military presence. Rest of the paper is structured as; the second section presents literature review, the third section deals with the data, methodology and empirical results, the fourth section comprises the discussion and the last section concludes and presents a few policy insights.

LITERATURE REVIEW

Adam Smith was the first one to express that institution's matter for the wealth of nations (Snowdon *et al.*, 2005). Later, World Bank (2002) has explained that there is a growing acceptability to the phenomenon that good institutions and incentive structures are essential for economic growth and prosperity. Another author finds that macroeconomic volatility and lower per capita income are caused by the weak institutional quality (Acemoglu *et al.*, 2001, 2002, 2003). North (1990) argued that evolution of economic and political institutions holds key importance in the economic history and economic development. Furthermore, the institutions shape an economic environment that facilitates efficiency and productivity. An appropriate approach would be to find that how existing literature defines the institutions and their quality.

The concept of institutional quality draws from multiple disciplines but still lacks precise operational definition. Moreover, it contains multiple ideas which are different from each other but closely related (Quibria, 2006; Seldadyo *et al.*, 2007). According to Hodgson (2006), institutions are: “*systems of established and prevalent social rules that structure social interactions.*” He considers the organizations as a “special kind of institutions, with additional features”;

“those involve (a) criteria to establish their boundaries and to distinguish their members from nonmembers, (b) principles of sovereignty concerning who is in charge and (c) chains of command delineating responsibilities within the organization” (Hodgeson, 2006)

Institutions can be in both forms i.e. formal and informal (Tabellini, 2010). The existing research informs that relative costs and patterns of production in a country depends on the quality of its institutions, labor capabilities, physical and human capital, and natural resources (Hausmann *et al.*, 2005). Easterly (2001) considers that the institutions which matter for economic performance are: Rule of law, corruption-free

government, efficient bureaucracy, protection of property rights, and political constraint on the executive.”

Determinants of Institutional Quality: Institutional development is a complex and long-term process, which requires concerted efforts because it is very difficult to alter the behavior of masses and organizational routines due to socio-cultural inertia. However, existing literature lists a number of factors, which could be the potential determinants of the institutional quality of the economic systems.

Alonso (2008) has classified certain variables, which contribute towards supply and/or demand sides of institutional quality. For example, the international openness of an economy creates a demand for more refined institutions and boosts competitive environment. It also facilitates learning and imitation of best practices around the world. According to Rajan and Zingales (2003), trade and financial openness can dilute the influence of the local political elite to modernization in a society. Another author has found a positive relationship between globalization and governance based on cross-country analysis (Bonaglia *et al.*, 2001). Educational level and tax collection contribute towards demand and as well as supply sides. Because improvements in the literacy rates induce a sense of realization amongst the citizens about their rights leading to an urge in the citizenry for better institutions. Similarly, taxpayers also call for better institutions. On the contrary, foreign aid dependence is found to erode the quality of governance as measured by rule of law.

Ararel (2008) maintains that foreign aid has a significant role in developing economies, but there is a scant discussion about the impact of such assistance on the bureaucracies of the host countries. He has developed a model and analytic case study to explain the relationship between donors and bureaucrats. Furthermore, the study discusses the impact of aforementioned relationship on the institutions and service delivery in host countries. The findings of the study are closely related to the axioms of institutional rational choice as both bureaucrats and donors pursue their self-interests. Another author has examined the effect of foreign aid on governance in Sub-Saharan Africa (Brautigam *et al.*, 2004). They have reported; (i) High aid levels lead to deteriorations in the governance in Africa, (ii) higher aid levels reduce tax share of GDP; and (iii) foreign aid continues to negatively impact the governance after applying controls for per capita GDP and violence. This implies that easy income

flowing through foreign aid or debt may cause less pressure on the government to generate more income domestically for this reason governments may have less incentive to improve the institutional qualityⁱ.

Another strand of the institutional literature provides insights about the role of military dictatorship. The theory of military dictatorship postulates that military poses a threat to the nascent democratization process in developing economies (Acemoglu *et al.*, 2009). Another author has documented the evidence of veto influence of the military in political and economic decisions in the Philippines (Hernandez *et al.* (2010). They have concluded that military will also play a significant role in the civil affairs of Philippines in the future. The military has contributed in shaping the institutions and their quality in a number of Asian countries particularly Sri Lanka, Bangladesh, Pakistan, and the Philippines among others. Siddiq (2007) has documented the different forms of civil-military relationship around the world and also mentioned that military is playing a role more than a policy instrument in a number of countries. She further mentions that military has institutionalized its role in a few countries including Pakistan, Turkey, and Indonesia. Therefore, we have strong reasons to believe that military might have connotations for the institutional quality of our sample of nations.

In this section, we have discussed conceptual and theoretical links between institutional quality and international openness, literacy level, tax collection, foreign aid/debt, income per capita and military influence. The literature review informs that an increase in the educational achievements, level of international openness, education level of the population, tax collection, while a decrease in foreign aid/debt and military's intrusion into civil matters should have the potential to improve the institutional quality of the different economic systems whereas controlling for income level. In the forthcoming section, we attempt to empirically examine this basic claim and the relative importance of these factors.

MATERIALS AND METHODS

Dataset: The data in this paper is taken from four different sources. Data for Law and order, Corruption, Bureaucratic quality and Democratic accountability is taken from International Country Risk Guide (ICRG). Data on Checks & Balances is obtained from the World Bank's Database of Political Institutions (DPI, 2010). Data on Civil Liberties and Political rights is taken from Freedom

House (FH). Real GDP per capita growth rate, Tax revenue as % of GDP, National debt as % of gross national income, Exports as % of GDP, Imports as % of GDP, Inward foreign direct investment as % of GDP, Outward foreign direct investment as % of GDP and Military expenditure as % of GDP have been obtained from World Development Indicators (WDI). While, the adult literacy rate has been taken from the United Nations Publications (UNP).

Detail of the seven variables capturing the institutional dimension for our analysis is as follows; Law and order, is based on the assessment of two components; i) strength and impartiality of the legal system, ii) popular observance of the law. Corruption indicates dishonesty within the political system and it takes into account demands for special payments and bribes associated with import and export licenses, exchange controls, tax assessments, police protection or loans; besides excessive patronage, such as nepotism, favor-for-favors, secret party funding, and suspiciously close ties between politics and business. Democratic accountability captures the extent of the government responsiveness to its citizens, the scores in this component are based on the type of governance in each country in study. These three indicators Law & order, Corruption and Democratic accountability are being rated on the scale of 1—6; lower rating (closer to 1) indicating a lower level of risks and vice versa. Bureaucratic quality is an assessment of the institutional strength and quality of the civil service as a shock absorber that tends to minimize revisions of policy when governments change. It is being rated on the scale of 1—4; high scores are assigned to countries where the bureaucracy is capable enough to govern without major changes in policy or interruptions in government services and vice versa.

Data on Checks & Balances, an assessment of constitutional constraints on political elite or executives gives an indication of political cohesion. Its score depends upon the number of vetoes in any political system. Data on Civil Liberties and Political rights capture the extent of protection of property rights and the freedom for individuals to carry out voluntary transactions. These proxies take into account the voluntary exchange facilitated by markets, free entry and competition, the respect of personal choices and protection of citizens and their property from the unlawful infringement from others. The scale is inverse for these two variables, a higher number implies lower quality, therefore, scale has been reversed to make them compatible with rest of the

dataset.

All above-mentioned indicators are for the sample of eleven Asian countries i.e. South Korea, Sri Lanka, Malaysia, Pakistan, Bangladesh, China, Indonesia, India, Philippines, Singapore and Thailand covering the period of observation from 1984 to 2010. Missing values have been completed by the various issues of the National Income Accounts of the respective countries e.g. Debt to GNI ratio for Singapore and South Korea, Tax to GDP ratio for Thailand. Most of the proxies for institutions in this study have been widely used by the empirical research on the determinants of output growth. In recent past, availability of data on institutional has increased considerably due to the interest of scholars in the discipline. However, we don't include these recent indicators because it would limit the sample to a very short period and resultantly it may lead to the results, which will make it difficult to justify and compare on the time dimension. A similar reason is to restrict our analysis up to eleven Asian countries, as there was a trade-off in increasing the sample size at the cost of the time dimension.

Methodology: Following the Adelman and Morris (1965, 1967), we use exploratory factor analysis to develop a latent factor “institutional quality” for eleven Asian countries using the data on seven indicators from ICRG, DPI 2010 and FH. Factor analysis is a statistical method used to identify a small set of unobserved dimensions that represent relationships among a large set of correlated observed variables. Our analysis proceeds in three steps; first, we have identified the variables, which could have the potential to explain the variations in the quality of the institutions prevailing in the respective countries. Following are the variables; Law and order, Corruption, Bureaucratic Quality, Check & Balances, Democratic accountability, Civil Liberties and Political rights. Summary statistics and correlation matrix are given in the Appendix I & II, respectively. Correlation matrix shows that out of 21 Pearson correlation coefficients, 18 are greater than 0.4. This implies that most of our observed variables are significantly correlated with each other, resultantly; there must be some unobserved common/latent factor(s). In the second step, we observed the inter-country factor analysis, for each year in the sample. For this, we applied the Cronbach's alpha test and its results are given in Appendix III. It tells us that either the variables in each group is internally consistent or not. For the significance of the measures, the values range

from 0 to 1, and any value greater than 0.7 is acceptable, however, values greater than 0.8 are better and greater than 0.9 are excellent (Kuncic, 2013). In the third step, we deal with factor extraction using the method of principal component analysis. According to the practice, only those factors are retained in the analysis whose are above an arbitrary threshold i.e. unity. Following this imperative in our analysis, we were able to derive one factor with 4.06 values given in Appendix IV. This factor describes 58% of the variance among the variables.

Following the similar procedure; we have also developed a latent factor to characterize the openness of the countries. We use the data on Exports as % of GDP,

Imports as % of GDP, Inward foreign direct investment as % of GDP, Outward foreign direct investment as % of GDP for our sample of countries. Summary statistics and correlation matrix are given in the Appendix I & II respectively. Correlation matrix shows that all the 10 Pearson correlation coefficients are above 0.65; signifying that there must be a latent unobserved factor. Factor has been extracted through principal component analysis method. We were able to derive one factor with 3.39 values given in Appendix V. This factor describes 85% of the variance among the variables. To investigate the determinants of Institutional quality we model the relationship as follows;

$$IQ_{i,t} = \alpha_1 + \alpha_2 \text{TaxR. gdp}_{i,t-1} + \alpha_3 \text{Debt. gni}_{i,t-1} + \alpha_4 \text{Literacy}_{i,t-1} + \alpha_5 \text{Open}_{i,t-1} + \alpha_6 \text{Military. gdp}_{i,t-1} + \alpha_7 \ln \text{GDP. pcgr}_{i,t-1} + U_{i,t} + v_{i,t} \quad (1)$$

where *i* is the country; *t* is the time period; *T* is a time lag i.e. taken to be one year or five years in the different regressions; *IQ* is the indicator for institutional quality Equation (1) estimates the fixed effects models with a one-year lag. Here, we assume that the variation across entities is random and uncorrelated with the independent variables included in the model. The choice between random effect and fixed effect model is made by the Hausman specification test. This test compares the fixed versus random effects model under the null hypothesis that the individual effects are uncorrelated with the other repressors in the model (Hausman, 1978). In our case, this test suggests that fixed effect is

appropriate. However Wooldridge test for autocorrelation in panel data (Lagrange-Multiplier test for serial correlation) confirms the presence of first-order autocorrelation (AR1) in our panel. Therefore equation (2) estimates the Feasible Generalized Least Squares (FGLS) Estimator: Whereas FGLS remove the problem of autocorrelation and heteroskedasticity in the model through assigning the weights (ω) in variance-covariance matrix. To predict the variation in institutional quality throughout five-year, we regressed the *IQ* variable on the five-year lag of independent variables.

$$IQ_{i,t} = \alpha_1 + \alpha_2 \text{TaxR. gdp}_{i,t-5} + \alpha_3 \text{Debt. gni}_{i,t-5} + \alpha_4 \text{Literacy}_{i,t-5} + \alpha_5 \text{Open}_{i,t-5} + \alpha_6 \text{Military. gdp}_{i,t-5} + \alpha_7 \ln \text{GDP. pcgr}_{i,t-5} + U_{i,t} \quad (2)$$

We applied the FGLS and system-GMM panel methods to resolve the potential biases emanating from cross-section estimations i.e. small sample bias, omitted variable bias, and endogeneity of explanatory variables.

RESULTS AND DISCUSSION

Descriptive statistics and the correlation matrix for the latent factors for Institutional Quality and Openness described so far, and the other variables included in our model are presented in Table 1 & 2 respectively. Institutional quality of a sample of countries falls within the range of -2.3 to 2.1. Correlation matrix shows that out of 21 correlations only four are greater than 0.50

implying that there is very less degree of co-linearity among all the variables, whereas Debt % of GNI and Military expenditure % of GDP are negatively correlated with most of the variables that corroborate our hypothesis.

Our panel data regression results (Model- 1 to 6 in Table: 3) show that tax revenue as % of GDP, national debt as % of gross national income, adult literacy rate are significantly determining institutional quality in the models with one year lags, while military expenditure as of GDP and openness have negligible and statistically insignificant effect on the institutional quality.

Table 1. Summary Statistics.

Variable	Mean	Std. Dev.	Min	Max	Obs.
Dependent Variables					
Institutional Quality	2.40E-10	1	-2.121316	2.222426	297
Independent Variables					
Tax Revenue % of GDP	13.08533	3.751471	5.607861	20.17229	297
Debt % of GNI	39.43598	24.46542	3.321	168.1971	297
Adult Literacy Rate	76.95026	21.73038	30.66753	99	297
Openness	77.33692	15.28014	53.4254	124.8376	297
Military Exp. % of GDP	2.822727	1.537333	0.8238053	7.549919	297
Control Variable					
RGDP per Capita (log)	7.167375	1.294651	5.4668	10.34554	297

Table 2. Correlation Matrix (Figures in parenthesis are P values).

	1	2	3	4	5	6	7
1) Institutional Quality	1						
2) Tax Revenue % of GDP	0.24 [0.00]	1					
3) Debt % of GNI	-0.42 [0.00]	0.38 [0.00]	1				
4) Adult Literacy Rate	0.43 [0.00]	0.57 [0.00]	0.06 [0.31]	1			
5) Openness	0.35 [0.00]	0.02 [0.70]	-0.19 [0.00]	0.26 [0.00]	1		
6) Military Exp. % of GDP	0.26 [0.00]	0.11 [0.08]	-0.31 [0.00]	-0.23 [0.00]	-0.06 [0.31]	1	
7) RGDP per Capita (log)	0.64 [0.00]	0.5 [0.00]	-0.36 [0.00]	0.65 [0.00]	0.44 [0.00]	0.21 [0.00]	1

Results presented in Table-3, Model-7 represents the FGLS estimates of all the explanatory variables with five years lag. In which real GDP per capita has a considerable positive impact on institutional quality, which represents that if there will be 1 unit increase in RGDP there would be 0.56 unit improvements in the institutional quality. FGLS model shows that all the independent variables have statistically significant impact on the institutional quality except openness and military expenditure. Openness and military expenditures have negligible and statistically insignificant impact in most of the models. This implies that institutions are in its formative phase for the sample being used in this study; therefore, openness has no potential to affect the institutional quality. Model-8 in Table-3 shows the final results, which is the most fitted model because its coefficients are statistically more significant, and it also resolves the problem of endogeneity. The relationship between independent variables and dependent variable is according to economic theory. Moreover, all the explanatory variables have a positive

effect on institutional quality except debt to GDP ratio and military expenditure.

Quantile regression plots can be used to capture the impact of the explanatory variables on the response variable as shown in Figure 1. Quantile regression models help to find the relation between a set of predictor/independent variables and specific percentiles (or quantiles) of the response variable. In fact, it indicates changes in the quantiles of the response (Koenker & Hallock, 2001). The quantile regression coefficient shows the rate of change in a specific quantile of the dependent variable due to one-unit change in the independent variable. This facilitates the comparison that how some quantiles (or percentiles) of the institutional quality may be more affected by certain predictors than other quantiles. In each plot, the regression coefficient at a given quantile shows the effect on institutional quality of a unit change in that variable, based on the assumption that the other variables are fixed, with 95% confidence interval bands.

OLS & Quantile Regression Estimates for Institutional Quality

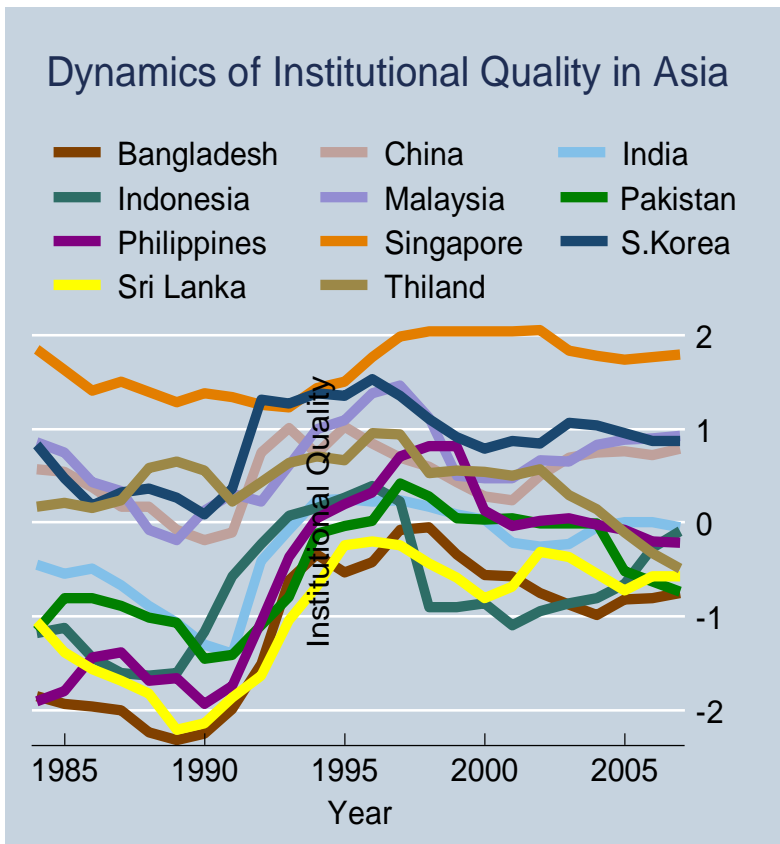
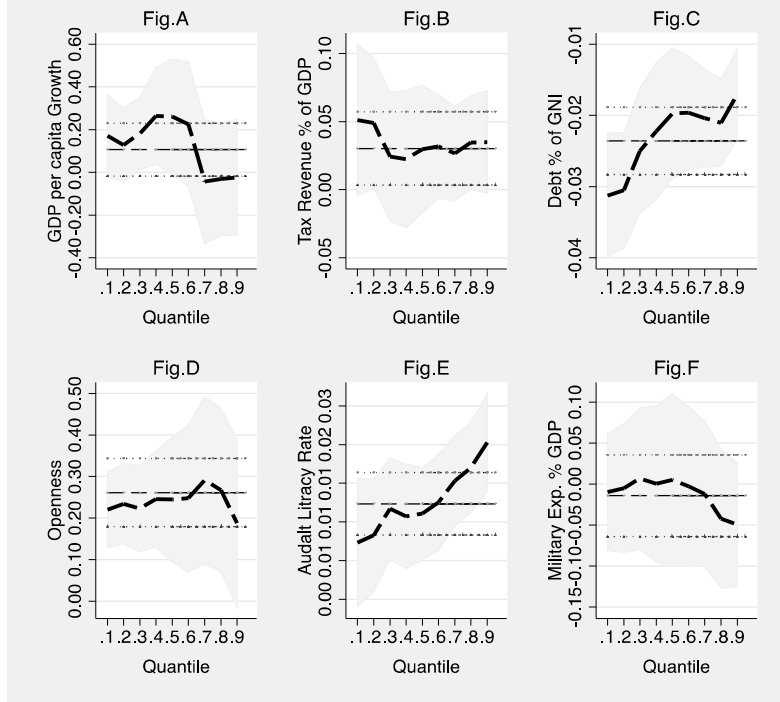


Figure 1. Graphical Illustration of Quantile Regression Analysis.

Table 3. Institutional Quality as Dependent Variable.

	1 FE	2 FE	3 FE	4 FE	5 FE	6 FE	7 FGLS	8 GMM
Tax Revenue % of GDP	0.0712*** [0.0236]	0.0670*** [0.0235]	0.0731*** [0.0233]	0.0721*** [0.0233]	0.0718*** [0.0234]	0.0718*** [0.0234]	0.0530** [0.0247]	0.0148** [0.0117]
Debt % of GNI		-0.00612** [0.00285]	-0.00619** [0.00281]	-0.00653** [0.00283]	-0.00644** [0.00288]	-0.00644** [0.00288]	-0.00521* [0.00291]	-0.00486*** [0.00121]
Adult Literacy Rate			0.0451*** [0.0173]	0.0457*** [0.0173]	0.0452** [0.0176]	0.0452** [0.0176]	0.0426** [0.0174]	0.00656* [0.00388]
Openness				0.0124 [0.0117]	0.0124 [0.0117]	0.0124 [0.0117]	0.00849 [0.0117]	0.00304* [0.00184]
Military Exp. % of GDP					-0.00997 [0.0554]	-0.00997 [0.0554]	-0.0266 [0.0554]	-0.0395 [0.0294]
RGDP per Capita (log)							0.565** [0.250]	0.141** [0.0690]
Institutional Quality 1 (Laged)								0.865*** [0.0248]
Constant	1.686*** [0.358]	1.097*** [0.347]	4.885*** [1.493]	6.021*** [1.908]	5.952*** [1.951]	5.952*** [1.951]		
Observations	297	297	297	297	297	242	297	286
No. Of Countries	11	11	11	11	11	11	11	11
R2 squared	0.45	0.46	0.47	0.48	0.48	0.48	--	--
Hausman Test						58.47		
Prob.						0.001		

- Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1,.
- Significant at 10% ; ** Significant at 5%; *** Significant at 1%
- 1 to 6) Fixed-Effects Models with one year lag
- 7) Generalized Least Square Model with five years lag i.e. to control the autocorrelation (AR1) and heteroskedasticity in the panels
- 8) GMM

This analysis implies that an increase in GDP per capita, tax collection and a decrease in military expenditure (as shown in Fig A, B and F respectively) have better potential to enhance the

institutional quality in the lower quantiles of our sample of Asian countries e.g. Bangladesh, India, Sri Lanka, Pakistan, Philippines and Thailand. Whereas, a decrease in indebtedness and an

increase in the level of education, international openness and tax collection (as shown in Fig C, D, E and B respectively) have better potential to enhance the institutional quality in the upper

quantiles of our sample of Asian countries e.g. Singapore, South Korea, Malaysia, Indonesia and China. A notable fact is that adult literacy rate, a proxy of the education system, does not have any potential to influence the institutional quality of the respective countries in the lower quantiles. This implies that syllabus and methodologies being used to impart education are not yielding results in these countries. Therefore, such countries should re-examine and refurbish their education system to make them deliver.

Quantile plot for openness shows that it has no impact on the institutions of the lower quantile whereas it has the great potential to uplift the quality of the institutions in upper quantile. This implies that countries in the lower quantiles are required to enhance the national capacity and capability to fully harness the benefits of openness otherwise it would be unwise to further open up their borders.

CONCLUSION

The main objective of this paper is to construct a comprehensive indicator of institutional quality and to explore its determinants, particularly in the Asian context. Literature shows that good institutions play a pivotal role in lowering transaction costs, ensuring contract enforcement, protecting property rights and enhancing productivity while providing a level playing field to all economic agents. Following this functional and objective definition of institutions, we have developed an index of institutional quality for the sample of eleven Asian countries using the data of law and order, corruption, quality of bureaucracy, democratic accountability, check and balances, political rights and civil liberties by carrying out the exploratory factor analysis.

According to the review of literature, a basic claim is that an increase in the efficiency of taxation system, level of adult literacy rate, international openness and a decrease in national debt and military's expenditure should have the potential to improve the institutional quality of the different economic systems whereas controlling for real income per capita.

Our penal data regression results show that tax revenue as % of GDP, national debt as % of gross national income, real GDP per capita, adult literacy rate are significantly determining institutional quality with one year lag, while military expenditure as % of GDP and international openness (a principal component factor constructed thru FDI inflow and outflow as % of GDP and Export and

Imports as % of GDP) have no impact on institutional quality in our sample. However, in the models with 5-year lag, Feasible Generalized Least Squares Estimator shows that all the explanatory variables are significantly determining the institutional quality except military expenditure and openness besides improvement in the level of significance and coefficient value.

Overall our results could be interpreted that level of institutional development itself is an important precondition to evaluate the impact of different influencing variables upon institutional quality. Our results clearly show that it is not necessary that all the determinants impact the institutional quality across the board rather a fine distinction is required viz à viz the level of institutional development of the respective countries. Except for tax collection, all other determinants, e.g. indebtedness, openness, and military expenditure have a very dissimilar effect on institutional quality across the countries in our sample. Quantile analysis implies that an increase in GDP per capita, tax collection and a decrease in military expenditure have better potential to enhance the institutional quality in Bangladesh, India, Sri Lanka, Pakistan, Philippines, and Thailand i.e. the lower quantiles of our sample. Whereas, a decrease in indebtedness and an increase in the level of education, international openness, and tax collection have better potential to enhance the institutional quality in Singapore, South Korea, Malaysia, Indonesia and China i.e. the upper quantiles of our sample of Asian countries. A notable fact is that adult literacy rate, a proxy of the education system, does not have any potential to influence the institutional quality of the respective countries in the lower quantiles. This implies that syllabus and methodologies being used to impart education are not yielding results in these countries. Therefore, such countries should re-examine and refurbish their education system to make them deliverable. Likewise, international openness has no impact on the institutions of the lower quantile whereas it has the great potential to uplift the quality of the institutions in upper quantile. This implies that countries in the lower quantiles are required to enhance the national capacity and capability to fully harness the benefits of openness otherwise it would be unwise to further open up their borders.

As for as policy implications of our analysis are concerned; a substantial care needs to be taken while devising the reforms agenda to uplift the quality of the

institutions because our results confirm that there is no straight jacket to fit all. Countries having lower institutional quality should enhance GDP per capita in the short run while increasing the tax collection and decreasing the military expenditure in the longer-run. Furthermore, such countries should revamp their education system so that it could better deliver the awareness and sense to understand one's rights and duties viz à viz state. International openness has profound implications for institutional development, but an absorptive capacity is an important prerequisite to fully harness its benefits which could only be ensured through education and training. However, this last claim calls for further empirical validation.

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Variable	Mean	Std. Dev.	Min	Max	Obs
Law and order	3.27992	1.405636	0	6	297
Corruption	2.645991	1.223526	0	6	297
Bureaucracy's quality	2.308171	.9826613	0	4	297
Democratic accountability	3.535038	1.398058	0	6	297
Checks & balances	3.375	2.713069	1	18	297
Political rights	3.829545	1.639959	1	7	297
Civil liberties	4.185606	1.185953	2	7	297
Inward FDI as % of GDP	2.551412	3.865486	-2.757439	20.23999	297
Outward FDI as % of GDP	.805884	2.360532	-.196586	23.3083	297
Exports as % of GDP	38.43588	38.89028	3.279997	233.5448	280
Imports % of GDP	38.28546	33.26433	7.058327	204.5468	280

Appendix – II. Correlation Matrix for Factor Analysis (Figures in parenthesis are P values).

Variables*	1	2	3	4	5	6	7	8	9	10	11
1) Law and order	1 (0.00)										
2) Corruption	0.59 (0.00)	1.00 (0.00)									
3) Bureaucracy's quality	0.60 (0.00)	0.62 (0.00)	1.00 (0.00)								
4) Democratic accountability	0.04 (0.48)	0.19 (0.00)	0.10 (0.11)	1.00 (0.00)							
5) Checks & balances	0.09 (0.13)	0.10 (0.11)	0.26 (0.00)	0.42 (0.00)	1.00 (0.00)						
6) Political rights	0.11 (0.07)	-0.03 (0.65)	-0.16 (0.01)	-0.62 (0.00)	-0.49 (0.00)	1.00 (0.00)					
7) Civil liberties	0.09 (0.13)	0.03 (0.58)	-0.20 (0.00)	-0.55 (0.00)	-0.39 (0.00)	0.82 (0.00)	1.00 (0.00)				
8) Inward FDI % of GDP	0.57 (0.00)	0.48 (0.00)	0.43 (0.00)	-0.19 (0.00)	-0.13 (0.00)	0.26 (0.00)	0.17 (0.00)	1.00 (0.00)			
9) Outward FDI % of GDP	0.41 (0.00)	0.31 (0.00)	0.41 (0.00)	-0.14 (0.02)	-0.09 (0.14)	0.13 (0.03)	0.05 (0.41)	0.77 (0.00)	1.00 (0.00)		
10) Exports as % of GDP	0.40 (0.00)	0.38 (0.00)	0.42 (0.00)	-0.04 (0.53)	-0.05 (0.43)	0.09 (0.15)	-0.05 (0.48)	0.82 (0.00)	0.70 (0.00)	1.00 (0.00)	
11) Imports % of GDP	0.37 (0.00)	0.41 (0.00)	0.40 (0.00)	-0.02 (0.76)	-0.04 (0.54)	0.06 (0.31)	-0.06 (0.35)	0.83 (0.00)	0.69 (0.00)	0.99 (0.00)	1.00 (0.00)

