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Governance and Development Outcomes in Asia

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Kunal Sen

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CONTENTS

ABSTRACT v

I. INTRODUCTION 1

II. THE RELATIONSHIP BETWEEN GOVERNANCE AND DEVELOPMENT 2

III. EMPIRICAL STRATEGY, VARIABLES, AND DATA 3

A. Measuring Governance 3
B. Empirical Strategy 4

IV. EMPIRICAL ANALYSIS AND RESULTS 7

A. Alternate Specifications and Robustness Tests 11
B. Testing for Causal Mechanisms 12

V. CONCLUSIONS AND POLICY IMPLICATIONS 14

REFERENCES 15

ABSTRACT

The relationship between governance and economic development is one of the most important areas of research in international development. Much of the previous literature has focused on whether better governance leads to higher levels of income. In this paper, we examine the relationship between governance and broader development outcomes, with a specific focus on developing Asia. In our empirical analysis, we use disaggregated measures of governance to capture different dimensions of governance, and to allow for the possibility that different dimensions of governance such as administrative capacity, legal infrastructure, and state accountability can affect development indicators differentially. We find a clear role for governance in affecting most development outcomes except levels of schooling. This is particularly evident for state administrative capacity and legal infrastructure, and less evident for state accountability. However, we find that the benign relationship between governance and development is weaker for Asian countries for several of the development indicators. We also find that the key mechanism by which governance affects development is by increasing the mobilization of domestic resources and by increasing the effectiveness with which these resources are spent on social sectors. Along with the fact that governance quality is lower in Asia than other regions of the world (except sub-Saharan Africa), this suggests that improvements in governance along with the strengthening of the mechanisms by which governance affects social development can deliver clear gains in development outcomes in developing Asia.

Keywords: governance, development outcomes, Asia

JEL Classification: I30, O11, O53

I. INTRODUCTION

The relationship between governance and economic development is one of the most important areas of research in international development (Grindle 2004). Governance can be defined as "the manner in which power is exercised in the management of a country's economic and social resources for development" (World Bank 1991). Development agencies have increasingly come to realize that good governance is not only a worthy goal in and of itself but also a means to impact on a variety of other outcomes, particularly economic growth and development (Gisselquist 2002). In poorly governed countries, high levels of corruption lead to evasion of taxes that could have been used to finance productive government investment and social expenditures for the poor. High levels of corruption also lead to the diversion of government funds that could have been used for service delivery to the poor (Rajkumar and Swaroop 2008). Low administrative capacity of the state along with weak accountability of service providers to citizens imply that government expenditures in health, education, and infrastructure are not spent effectively for poverty reduction and the achievement of broader development outcomes (World Bank 2004). As former United Nations Secretary-General Kofi Annan noted: "good governance is the single most important factor in eradicating poverty and promoting development" (UNDP 2002).

Surprisingly, given the importance of understanding the causal relationship between governance and broader development outcomes, much of the empirical literature has mostly focused on the narrower question of whether good governance leads to higher levels of income (Evans and Rauch 1999; Kaufmann, Kraay, and Mastruzzi 2009). In contrast, there is scant literature on the relationship between governance and broader development outcomes such as poverty and inequality, human development, years of schooling, gender inequality, infant and maternal mortality, and access to adequate sanitation (the exceptions are Rajkumar and Swaroop [2008] and Hallerod et al. [2013]). Whether better governance leads to broader development outcomes over and above improvements in living standards is particularly relevant in the context of developing Asia, where many countries have seen strong economic growth and an impressive expansion in public services in recent decades, but where there is wide variation in governmental performance with regard to service delivery and in broader development outcomes such as infant and maternal mortality, schooling, and access to sanitation (Asian Development Bank 2013). Furthermore, developing Asia has been characterized by weak and dysfunctional governance systems, relative to other regions of the world (Quibria 2013).

First, we examine the causal relationship between governance and broad development outcomes and assess whether higher levels of governance leads to greater achievements in economic and social development. To capture economic and social development, we use a wide range of development indicators, such as headcount poverty, infant and maternal mortality, human development, literacy, gender inequality, access to sanitation, and quality of infrastructure provision. Second, we examine the relationship between governance quality and development outcomes with a focus on developing Asia, and assess whether the relationship is stronger or weaker for this region.

How to conceptualize and measure governance has remained a matter of considerable debate (Fukuyama 2013). It is now widely understood that a single definition or measure does not adequately capture the different dimensions of governance (Langbein and Knack 2010). The literature on governance distinguishes between three key interrelated but conceptually separate dimensions of governance: (i) state administrative capacity—the quality of the bureaucracy and the ability of the bureaucracy to deliver services (Fukuyama 2013); (ii) legal infrastructure—the ability of the government to enforce laws and regulations (Besley and Persson 2011); and (iii)

accountability and state legitimacy—the extent to which the state is accountable for its own actions and the responsiveness of the state's institutions to its citizens (UNDP 2011). In our empirical analysis, we unpack the concept of governance and use disaggregated measures of governance to capture different dimensions of governance. We do this to allow for the possibility that different dimensions of governance can affect development indicators differentially and that the use of a single measure of good governance may not be useful from a policy point of view to assess which dimension of governance may matter more in impacting one development indicator relative to others.

From a theoretical standpoint, the relationship between governance and broader economic and social development is less well-understood than the relationship between governance and economic growth. Does better governance lead to improvements in child and maternal mortality and reductions in poverty through its direct effect of increasing levels income, particularly for lower income classes, and, by doing so, allowing poor households to invest more in schooling, nutrition, and health? Or does it occur through the better ability of the state to collect tax revenues to finance social expenditures? Or is the effect of better governance mostly through the higher effectiveness of public goods delivery to the poor? We explore these very different causal mechanisms between governance and development to better understand the specific pathways by which governance can affect development. We assess which of these mechanisms may be more important for the developing Asia context.

II. THE RELATIONSHIP BETWEEN GOVERNANCE AND DEVELOPMENT

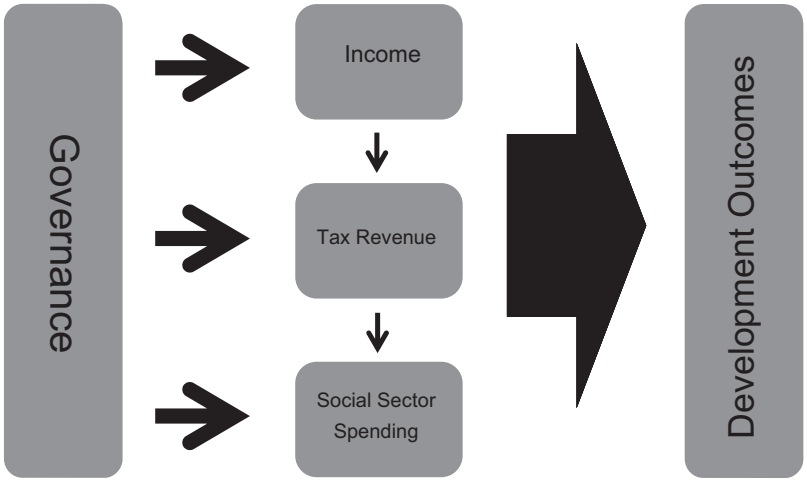
How would improvements in governance quality affect social development? In this section, we sketch out a framework for understanding the causal links between governance and social development outcomes. The first mechanism by which governance can affect development (and the one most commonly studied in the literature) is by increasing the level of per capita incomes—and especially the incomes of the poor—allowing households to invest more of their incomes in health, nutrition and education. The relationship between governance and levels of income has been well studied in the literature (Hall and Jones 1999; Aron 2000; Acemoglu, Johnson, and Robinson 2001; Glaeser et al. 2004; Rodrik, Subramanian, and Trebbi 2004). A better level of governance, such as improvements in legal infrastructure, provides firms with incentives to invest in productive activities such as the accumulation of capital and the development of new goods and production technologies. Better governance also provides incentives for households to spend more on health and education as they are encouraged by the possibility that they will be able to reap the benefits of these long-term investments. Better governance also implies that households need to divert less of their incomes to bribe corrupt government officials for essential services or to spend more on measures that protect their investments.

The second mechanism by which governance affects development is by allowing the state to collect more tax revenue and, consequently, spend more on the social sector. Greater administrative capacity of the government allows for more efficiency in tax collection, while lower levels of corruption allow for lower leakages in tax revenues (Mookherjee 1998). The final mechanism by which better governance improves social development outcomes is by making social sector spending and public goods delivery more effective. Greater accountability of service providers to citizens and politicians ensures that, for example, education and health services reach the majority of the population, while lower corruption implies lower leakage of public funds to the nonpoor (World Bank 2004). Dawson (2010) finds evidence for

improvements in the rule of law reducing child mortality. Rakjumar and Swaroop (2008) find that lower corruption leads to more effectiveness in service delivery. Hallerod et al. (2013) find that greater quality of government has a strong positive effect on a wide range of measures of child poverty and nutrition.

In Figure 1, we provide a summary of the three mechanisms by which governance affects development. Note that the mechanisms are not independent of each other. For example, a higher level of income will also imply higher tax revenues, if the elasticity of taxes to income is high. In general, we would expect the three mechanisms to work simultaneously, though the strength of these mechanisms may differ, both cross-nationally and by region.

Figure 1: The Relationship between Governance and Development



Source: Author's conceptualization.

III. EMPIRICAL STRATEGY, VARIABLES, AND DATA

In this section, we first describe our measures of governance, present the empirical strategy, and then discuss the sources of data.

A. Measuring Governance

While there is a range of governance measures that are available cross-nationally, we use the World Governance Indicators (WGIs) from the World Bank as our key governance measures. The WGIs have three advantages for our purpose. First, the WGIs are themselves based on other governance indicators, and each submeasure in the WGIs is constructed using principal component analysis from a wide range of sources of secondary data on different dimensions of governance (see Kaufmann and Kraay 2008; Kaufman, Kraay, and Mastruzzi 2009). Second, unlike other measures of governance such as the quality of government (QoG) measure (Holmberg and Rothstein 2013) or the measure of bureaucratic quality and control of corruption from the International Risk Country Guide (ICRG), which have limited coverage for developing Asia, WGIs have data on 35 developing Asian economies. Finally, the WGIs provide disaggregated data on different dimensions of governance: state administrative capacity, legal infrastructure, and accountability. The five WGI measures that we use are (i) voice and

accountability (VOA), (ii) government effectiveness (GEE), (iii) regulatory quality (RQ),(iv) rule of law (RL), and (v) control of corruption (CC). The five aggregate indicators are based on 30 underlying data sources reporting the perceptions of governance of a large number of survey respondents and expert assessments worldwide.[1] Government effectiveness and control of corruption capture state administrative capacity, regulatory quality capture legal infrastructure, and rule of law and voice and accountability capture accountability and legitimacy of the state. Each measure ranges from –2.5 (weak governance) to +2.5 (strong governance). For all the indicators, a higher score indicates a better rating.

Table 1 shows the averages by regions of the world for 2010 for the five indicators of the WGIs. Barring East Asia, other regions of Asia perform badly in governance quality relative to other developing country regions (though the Pacific does surprisingly well in voice and accountability). East Asia's score in regulatory quality is the same as North America's and Western Europe's, though the region does not do so well in control of corruption and voice and accountability. We also observe wide variations in governance quality within Asia. In general, South Asia's performance in governance quality is the worst in the region and comparable to sub-Saharan Africa.

Table 1: Averages for Governance Indicators, by Region and Subregion of Asia, 2010

Region	Government Effectiveness	Control of Corruption	Regulatory Quality	Rule of Law	Voice and Accountability	Number of Observations
Transition Economies	–0.12	–0.13	0.33	0.05	0.27	20
Latin America	–0.30	–0.29	–0.23	–0.57	–0.03	20
North Africa and Middle East	0.01	–0.09	–0.04	–0.05	–0.86	20
Sub-Saharan Africa	–0.79	–0.61	–0.71	–0.74	–0.64	48
Advanced Economies	1.56	1.63	1.46	1.52	1.33	27
Central Asia	–0.49	–0.88	–0.39	–0.77	–1.01	8
East Asia	0.21	–0.04	1.46	1.52	–0.21	6
South-east Asia	–0.09	–0.37	–0.22	–0.09	–0.74	11
South Asia	–0.51	–0.63	–0.73	–0.57	–0.47	8
The Pacific	–0.66	–0.34	–0.86	0.08	0.55	12
The Caribbean	0.46	0.54	0.26	0.33	0.80	13

Source: Worldwide Governance Indicators database, author's calculations.

B. Empirical Strategy

Our key explanatory variables are the five measures of governance described above, and we would like to establish whether better governance as measured by the WGIs lead to better development outcomes. We are also interested in ascertaining whether the relationship between governance and development is different for Asian countries as compared to the rest of the world.

[1] Details on the underlying data sources, the aggregation method, and the interpretation of the indicators can be found in Kaufmann, Kraay, and Mastruzzi (2007).

We estimate regressions of the following form:

$$D_i = a_1 + a_2{*}Gi + a_3{*}ASIA_i + a_4{*}ASIA{*}G_i + a_5Z_i + e_i \quad (1)$$

where *i* stands for country; *D* is the development outcome for country *i*; *G* is the relevant WGI measure of governance quality; *ASIA* is a dummy variable, which takes the value 1 for all of developing Asia(0 otherwise); and *Z* is a vector of control variables.

For *D*, we look at eight indicators that capture the range of economic and social development outcomes of interest to us. These are (i) headcount poverty(HCR) at $1.25 a day; (ii) under-5 mortality rate (U5M); (iii) maternal mortality rate (MMR); (iv) the United Nations Development Programme's (UNDP) Human Development Index (HDI); (v) UNDP's Gender Inequality Index (GII); (vi) years of schooling for children below 15 years (YOS);[2] (vii) proportion of households with access to adequate sanitation(AAS); and (viii) a combined measure of the quality of ports, railroads, and electricity supply (INFS).[3] Depending on the development indicator, we expect a_2 to be positive or negative and statistically significant (for HCR, U5M, MMR, and GII, we expect a_2 to be negative; and for HDI, YOS, AAS, and INFS, we expect a_2 to be positive). We are interested in assessing the sign and significance of the interaction term, *ASIA*G*—if a_2 is negative and significant, a negative and significant coefficient for a_4 suggests that the relationship between governance and development is stronger in Asia, while a positive and significant relationship suggests a weaker (or even perverse) relationship. Conversely, if a_2 is positive and significant, a negative and significant coefficient suggests that the relationship between governance and development is weaker in Asia, while a positive and significant relationship suggests that the relationship is stronger.

We use three variables as controls: the ratio of net development assistance to gross domestic product (GDP), the share of urban population (URBAN), and the number of developmental civil society organizations (CSOs) as a ratio of the population. We would expect that higher aid flows to developing countries will enable them to use some or all these aid flows for social sector spending; hence, countries with higher aid flows are expected to do better in development outcomes (though donor countries may also target countries with poor development performance for assistance). The literature on public service delivery suggests that it is easier to target more urbanized populations, so that the relationship between urbanization and development outcomes is expected to be positive. A greater presence of developmental CSOs in a particular country may allow for greater provision of services by the non-state sector to the poor.

We estimate equation (1) by ordinary least squares, using cross-sectional data (with HCR, U5M, MMR, HDR, GII, YOS, AAS, INFS, AID, and URBAN in logs). Similar to the methodology followed by Hall and Jones (1999) and other studies that examine the long-term effect of institutions on levels of income using cross-sectional regression methods, we are interested in examining the long-run effects of governance on broader developmental outcomes such as success in reducing poverty, inequality, and malnutrition, which are long-term

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[2] Average schooling years in total population aged 15 years or less, obtained from Barro and Lee (2000), and as reported in the World Development Indicators of the World Bank.

[3] The World Development Indicators report the quality of port and railroad infrastructure and quality of electricity supply from a range of 1 to 7 for each measure, where 1 = extremely underdeveloped and 7 = efficient by international standards. These data are obtained from the World Economic Forum's *Global Competitiveness Report*.

phenomena.[4] However, to allow for the possibility of reverse causality from the development outcomes to governance (say, greater levels of human development that foster positive changes to governance quality, with a more literate population demanding greater accountability and transparency in government), we also use instrumental variable two-stage least squares regressions, where we instrument governance quality with standard variables that are conventionally used in the literature as instruments—the settler mortality rate (Acemoglu, Johnson, and Robinson 2001), latitude of the country, and colonial origin of the country's legal system. The first has been extensively used in the growth institutions literature: The settler mortality rate is an indirect measure of the disease environment in the colonies and thus measures the likelihood of Europeans settling in a particular colony and setting up institutions of private property. Acemoglu, Johnson, and Robinson (2001) find that there is a high correlation between the mortality rates faced by soldiers, bishops, and sailors in the colonies and European settlements and early measures of institutions, as well as between early institutions and current institutions. They show that he settler mortality rate is not able to explain current development outcomes directly and thus meets the exclusion restriction for a valid instrument. Geographical variables such as latitude has been used extensively as instruments for institutions and governance—the farther one is from the equator, the less likely it is that countries adopted Western-style institutions (Hall and Jones 1999). Finally, we use the colonial origin of the legal system of the country. As La Porta et al. (1999) have shown, greater institutional quality is associated with countries with English common law systems as compared to French civil law systems. We also experiment with two alternate measures of governance: the government impartiality measure (QOG) developed by the Quality of Government Institute, which scores the public administration of countries based on their impartiality, viewed by Holmberg and Rothstein (2013) to be a measure of good governance; and the ICRG measure of the quality of government (INST), which is the mean value of the ICRG variables *corruption*, *law and order*, and *bureaucratic quality*, and which is based on perceptions of experts on these governance indicators for 139 countries.

A common criticism of cross-sectional methods is that they are not able to address unobserved time-invariant country attributes that may drive certain variables such as, in our case, development outcomes and governance quality. For example, a more homogenous or less fractionalized population in a particular country may imply that public goods provision may be more likely in that country and will be correlated with better governance if elites share a common vision and are less polarized (Alesina and Zhuravskaya 2011; Alesina, Baquir, and Easterly 1999; Alesina et al. 2003). As the WGIs are not appropriate for use in a panel data format (Quibria 2013), we use two measures from the ICRG bureaucratic quality (BQ) and control of corruption (CCTS)—data for which are available from 1984onward for a limited number of countries (15 of them being in Asia).

Data. The data are obtained from the University of Gothenburg's Quality of Government (QoG) Institute, which provides cross-sectional data on a variety of governance and development variables[5]; compiling data from secondary sources. The development indicators are obtained from the World Bank's World Development Indicators (WDI)[6] for 2010 or the nearest year for which data are available. With respect to the control variables, aid as a ratio of GDP (AID)and share of urban population in total population (URBAN) are obtained from the

[4] In addition, WGIs are not appropriate to be used in panel format as the sources of WGI data have changed over time (Quibria 2013), and several of the development indicators we use on the left hand side are available infrequently for many low-income countries.

[5] See version of May 2013 at http://ww.qog.pol.gu.se/data/

[6] See http://data.worldbank.org/data-catalog/world-development-indicators.

WDI, while developmental CSOs as a ratio of GDP is obtained from Grimes (2008), who provides data on the number of CSOs active in the area of social and economic development (as in the QOG data). The WGIs are for 2010 and are obtained from the WGI database.[7] The other governance variables, QOG, and INST, are obtained from the QoG dataset for 2010, while the time-series data on BQ and CCTS are obtained from ICRG for 1984–2010.

IV. EMPIRICAL ANALYSIS AND RESULTS

We begin our empirical analysis by looking at the averages of the eight development indicators by region in Table 2. We observe that Asia scores badly in most of these indicators than other regions, except for sub-Saharan Africa. The only exception is the quality of infrastructure, where Asia does better than Latin America and the Caribbean, and the Middle East and North Africa. In gender inequality, Asia does not score significantly worse than these regions. Within Asia, we also see wide variation in development outcomes, with Central and East Asia doing better than South Asia, Southeast Asia, and the Pacific in most outcomes (Table 3).Central Asia does better than East Asia in lower headcount poverty, lower maternal mortality, and greater access to adequate sanitation.

Main Results: We present the results for state administrative capacity and legal infrastructure—government effectiveness, control of corruption, and regulatory quality—in Table 4 and the results for state accountability and legitimacy—voice and accountability and rule of law—in Table 5.

Table 2: Averages for Development Indicators, by Region

Region	Transitional Economies	Latin American and Caribbean	Middle East and North Africa	Advanced Economies	Sub-Saharan Africa	Asia
Head Count Poverty, $1.25 a day (per cent)	0.52	6.75	1.43	N/A	47.60	15.1
Under Five Mortality Rate	11.8	21.9	20.4	4.3	104.6	34.2
Maternal Mortality Rate	17.9	84.0	54.3	7.5	580.1	181.8
Human Development Index (between 0 and 1)	0.77	0.71	0.72	0.88	0.44	0.64
Gender Inequality Index (between 0 and 1)	0.23	0.44	0.41	0.14	0.59	0.40
Access to Adequate Sanitation	92.1	80.4	90.9	99.9	34.4	72.0
Quality of Infrastructure (between 3 and 21)	10.5	9.3	11.2	15.9	9.4	11.6
Years of Schooling	10.6	8.4	7.6	10.8	5.4	7.8

Source: Author's calculations from World Bank (2013). The year of the observations is 2010 or the nearest year for which data are available.

[7] See http://info.worldbank.org/governance/wgi/

Table 3: Averages for Development Indicators, by Subregion, Developing Asia

	HCR	HDI	GII	U5M	MMR	AAS	YOS	INFS
Central Asia	5.0	0.67	0.35	41.0	41.1	93.6	9.7	11.2
South Asia	19.0	0.47	0.46	48.2	362.9	50.3	5.4	10.0
East Asia	13.1	0.77	0.20	15.0	57.8	78.8	9.8	10.1
Southeast Asia	18.8	0.63	0.39	30.9	206.5	70.5	7.1	11.7
Pacific	N.A.	0.62	0.67	30.3	186.5	65.9	6.8	10.5

Notes: HCR: headcount ratio, $1.25 a day; HDI: UNDP's Human Development Index; GII: UNDP's Gender Inequality Index; U5M: Under-5 mortality rate, MMR: Maternal mortality rate; AAS: Proportion of households with access to adequate sanitation; YOS: Years of schooling for population under 15; INFS: Combined measure of the quality of port and railroad infrastructure, and reliability of electricity supply.

HCR and AAS are in percentages; HDI and GII are between 0 and 1 (higher values of HDI imply higher human development, higher values of GII imply lower gender inequality); U5M and MMR are per 1,000; YOS is average years of schooling; INFS is a value which ranges from 3 to 21.

Source: World Bank (2013).

Table 4: Regression Results, Administrative Capacity and Legal Infrastructure

	(1) HCR	(2) HDI	(3) GII	(4) U5M	(5) MMR	(6) AAS	(7) YOS	(8) INFS
GE	–0.77*	0.16***	–0.22***	–0.59***	–0.72***	0.26***	0.16**	0.17***
	(0.099)	(0.000)	(0.000)	(0.000)	(0.000)	(0.003)	(0.015)	(0.001)
Asia	0.18	0.07	–0.14*	–0.19	–0.21	0.14	0.17	0.09
	(0.772)	(0.115)	(0.082)	(0.280)	(0.461)	(0.323)	(0.107)	(0.160)
GE*Asia	1.08	–0.15**	0.05	0.30	0.59*	–0.40**	–0.08	0.156
	(0.24)	(0.008)	(0.605)	(0.186)	(0.094)	(0.033)	(0.543)	(0.117)
R-square	0.38	0.73	0.33	0.57	0.53	0.50	0.47	0.37
CC	–0.49	0.11***	–0.16**	–0.54***	–0.54***	0.18**	0.10**	0.11**
	(1.08)	(0.000)	(0.006)	(0.000)	(0.003)	(0.043)	(0.044)	(0.045)
Asia	0.09	0.13*	0.18*	–0.40*	–0.37	0.18	0.10	0.26**
	(0.909)	(0.098)	(0.100)	(0.050)	(0.326)	(0.367)	(0.381)	(0.036)
CC*Asia	0.80	–0.08	0.05	0.04	0.40	–0.28	–0.19	0.24
	(0.408)	(0.274)	(0.713)	(0.150)	(0.344)	(0.193)	(0.123)	(0.122)
R-square	0.30	0.70	0.26	0.56	0.49	0.47	0.46	0.28
RQ	–0.75*	0.13***	–0.15***	–0.42***	–0.69***	0.20**	0.08	0.09**
	(0.066)	(0.000)	(0..002)	(0.000)	(0.000)	(0.010)	(0.165)	(0.044)
Asia	–0.06	0.11**	–0.20**	–0.36*	–0.32	0.21	0.23**	0.12*
	(0.919)	(0.018)	(0.019)	(0.065)	(0.255)	(0.162)	(0.043)	(0.080)
RQ*Asia	0.79	–0.09	0.03	0.09	0.47	–0.27	0.02	0.26*
	(0.416)	(0.119)	(0.766)	(0.695)	(0.171)	(0.141)	(0.884)	(0.055)
R-square	0.32	0.71	0.28	0.53	0.53	0.49	0.45	0.29
Number of Observations	69	119	99	119	119	116	93	80

Notes: HCR: headcount ratio, $1.25 a day; HDI: UNDP's Human Development Index; GII: UNDP's Gender Inequality Index; U5M: Under-5 mortality rate, MMR: Maternal mortality rate; AAS: Proportion of households with access to adequate sanitation; YOS: Years of schooling for population under 15; INFS: Combined measure of the quality of port and railroad infrastructure, and reliability of electricity supply.

GE: Government effectiveness; CC: Control of corruption; RQ: Regulatory quality.

Control variables: log (Net Development Assistance/GDP); log (Urban Population share of total population), and log (Developmental civil society organizations per capita), p-values in parentheses.

***, ** and * denote significance at 1%, 5%, and 10%, respectively.

Source: Author's estimates.

Table 5: Regression Results, State Accountability and Legitimacy

	(1) HCR	(2) HDI	(3) GII	(4) U5M	(5) MMR	(6) AAS	(7) YOS	(8) INFS
VA	–0.15	0.11***	–0.11**	–0.31***	–0.44***	0.07	0.08	0.04
	(0.707)	(0.000)	(0.012)	(0.000)	(0.000)	(0.327)	(0.218)	(0.394)
Asia	0.34	0.09*	–0.18*	–0.40*	–0.05	0.15	0.27	0.04
	(0.639)	(0.058)	(0.102)	(0.050)	(0.867)	(0.346)	(0.128)	(0.647)
VA*Asia	0.98	–0.11**	0.31***	0.05	0.79***	–0.28*	0.05	–0.05
	(0.209)	(0.025)	(0.002)	(0.794)	(0.009)	(0.086)	(0.812)	(0.618)
R-square	0.30	0.70	0.28	0.51	0.51	0.47	0.45	0.19
RL	–0.94**	0.13***	–0.17***	–0.51***	–0.62***	0.23***	0.17	0.13***
	(0.024)	(0.000)	(0.002)	(0.000)	(0.000)	(0.009)	(0.253)	(0.009)
Asia	0.57	0.089	–0.16*	–0.36	–0.19	0.10	0.19	0.17**
	(0.721)	(0.111)	(0.099)	(0.106)	(0.572)	(0.576)	(0.118)	(0.045)
RL*Asia	1.49	–0.11*	0.04	0.08	0.58	–0.40**	–0.04	0.20*
	(0.140)	(0.092)	(0.390)	(0.756)	(0.139)	(0.049)	(0.808)	(0.085)
R-square	0.40	0.70	0.28	0.55	0.51	0.49	0.45	0.33
Number of Observations	69	119	99	119	119	116	93	80

Notes: HCR: Head Count Ratio, $1.25 a day; HDI: UNDP's Human Development Index; GII: UNDP's Gender Inequality Index; U5M: Under 5 years Mortality Rate, MMR: Maternal Mortality Rate; AAS: Proportion of households with access to adequate sanitation; YOS: Years of schooling for Population Under 15 years; INFS: Combined measure of the quality of port and railroad infrastructure, and reliability of electricity supply.

VA: Voice and Accountability, RL: Rule of Law.

Control variables: log (Net Development Assistance/GDP); log (Urban Population share of Total Population, and log Developmental CSOs per capita; p-values in parentheses.

***, ** and * denote significance at 1%, 5%, and 10%, respectively.

Source: Author's estimates.

We first discuss Table 4. We find that improvements in government effectiveness and regulatory quality are associated with lower headcount poverty, but not improvements in control of corruption (column (1)). The interaction terms GQ*ASIA are not significant for GE, CC, and RQ, suggesting that the relationship between governance and poverty for Asia is no different than for the rest of the world. In the case of the Human Development Index, under-5 mortality rate, and the Gender Inequality Index, all three measures of governance—government effectiveness, control of corruption, and regulatory quality—are associated with better outcomes, with the coefficients on the governance variables of the right sign and significant (columns (2)–(4)). However, for government effectiveness, the relationship for Asia is weaker than for the rest of the world, as the coefficients on the interaction terms are negative and positive for HDI and U5M respectively. With respect to maternal mortality, access to adequate sanitation, years of schooling and quality of infrastructure, all three governance measures have a positive impact on these outcomes, except in the case of years of schooling, where regulatory quality has no discernible effect (columns (5)–(8)). The relationship between governance and the development outcome in question is weaker for developing Asia for government effectiveness in the case of maternal mortality and access to sanitation. However, the relationship is stronger for regulatory quality with respect to quality of infrastructure for these economies.

We now consider the effects of state accountability on development outcomes. The results are presented in Table 5. We see that voice and accountability has no discernible

negative effect on poverty, but that rule of law does (column (1)). We find that both voice and accountability and rule of law have the expected effects on human development, gender inequality, and under-5 mortality—the coefficients are of the right signs and are statistically significant (columns (2)–(4)). However, the relationship between governance and human development is weaker for developing Asia for both voice and accountability and the rule of law and in the case of gender inequality for voice and accountability. In fact, for human development and gender inequality, the magnitude of the interaction term swamps the direct effect of voice and accountability, suggesting that there is a perverse negative relationship between human development and gender equality on the one hand and voice and accountability on the other in the case of developing Asia. With respect to maternal mortality and access to adequate sanitation, both governance measures have a positive impact on these outcomes, though the relationship between both governance measures and access to sanitation is weaker in the case of developing Asia (columns (5) and (6)). In the case of years of schooling, we see no discernible effect of these two governance measures (column (7)). In the case of quality of infrastructure, voice and accountability has no effect, though regulatory quality has a positive effect and, in the case of the latter, the relationship is stronger for developing Asia.

Why do we see a weaker relationship between government effectiveness and voice and accountability on the one hand and several of the development indicators for Asia as compared to the rest of the world? To answer this question, consider Tables 1 and 3 again. In developing Asia, East Asia has a particularly low score in voice and accountability and Central Asia in government effectiveness and the rule of law. However, both these subregions have done well in several of the development indicators such as a high Human Development Index, reduction in maternal mortality, and high access to adequate sanitation. These two subregions of Asia have done better in development than may be predicted by their governance quality (voice and accountability in the case of East Asia and government effectiveness and the rule of law in the case of Central Asia). This implies that the strong relationship between low governance and low development that we observe in the rest of the world is not so evident in the Asian region.

Table 6: Summary of Main Results

	HCR	HDI	GII	U5M	MMR	AAS	YOS	INFS
Does better governance quality lead to improvements in the development indicator?	Yes	Yes	Yes	Yes	Yes	Yes, but not VA.	Yes, but only for GE and CC	Yes, but not for VA.
Is the relationship stronger or weaker for Asia, or the same?	Same	Weaker, for GE, VA and RL, Negative for all three.	Weaker, for VA (negative relationship)	Same	Weaker, for GE and VA (negative relationship)	Weaker, for GE, and RL. For VA, the effect is negative.	Same	Stronger for RQ and RL, the same for others

Notes: Yes, when the coefficient on the governance is of the right sign and statistically significant at 10% or less. Same, when the coefficient of the interaction term of the Governance measure with the Asia dummy is statistically not significant at 10% or less; Weaker/Stronger, when the coefficient of the interaction term of the governance measure with the Asia dummy is statistically significant at 10% or less.

HCR: Head Count Ratio, $1.25 a day; HDI: UNDP's Human Development Index; GII: UNDP's Gender Inequality Index; U5M: Under 5 years Mortality Rate, MMR: Maternal Mortality Rate; AAS: Proportion of households with access to adequate sanitation; YOS: Years of schooling for Population Under 15 years; INFS: Combined measure of the quality of port and railroad infrastructure, and reliability of electricity supply.

GE: Government Effectiveness, CC: Control of Corruption and RQ: Regulatory Quality; VA: Voice and Accountability, RL: Rule of Law.

Source: Author's estimates.

In Table 6, we summarize our main findings. The relationship between better governance and better development outcomes generally holds true for all development outcomes, except years of schooling. However, the effect of greater voice and accountability on better development outcomes is not evident from our results across all development indicators. We also find that, in general, the relationship between governance and development is weaker for developing Asia, except in the case of quality of infrastructure, where the relationship is stronger.

A. Alternate Specifications and Robustness Tests

While our main results show a clear positive relationship between governance quality and development indicators for most governance measures and development indicators, given the criticisms of the WGI indicators (Quibria 2013), we confirm whether our results are robust to alternate measures of governance quality—the measure of government impartiality developed by the Quality of Government Institute and ICRG's measure of governance. We present the results in columns (1) and (2) of Table 7 (with HDI and control of corruption as our key left- and right-hand side variables).[8] We see that the positive effect of governance quality on human development is still evident with these new measures of governance. Further, we present instrumental variable estimates of equation (1), using the settler mortality rate, the legal origin of the country, and the latitude of the country as instruments for our governance measure (we use regulatory quality as our measure of governance in this case) in column (3). The coefficient on GQ remains positive and statistically significant (the p-value of Hansen's J statistic shows that the instruments are valid). Finally, we use a panel dataset with time-varying measures of governance quality available from ICRG to address unobserved time-invariant country attributes that may explain both high levels of governance and higher attainment of social development (for example, cultural factors). We look at two alternate time-series measures of governance available from ICRG—bureaucratic quality and control of corruption. We calculate estimates of equation (1) (without the dummy variable for Asia which is time-invariant and its interaction with GQ) with country-fixed effects, and present the results in columns (4) and (5). We find that the coefficients on bureaucratic quality and control of corruption are of the right sign and significant. Thus, there is strong evidence that the relationship between governance quality and social development outcomes is robust to a variety of alternate specifications, measures of governance, and estimators.

[8] The results are the same with different combinations of our development indicators on the left-hand side and WGI governance measures on the right-hand side.

Table 7: Further Results and Robustness Tests

	(1) Human Development Index	(2) Human Development Index	(3) Human Development Index	(4) Human Development Index	(5) Human Development Index
GQ	–	–	0.37** (0.041)	–	–
GQ*Asia	–	–	0.39 (0.335)	–	–
Asia	0.18** (0.018)	0.67** (0.010)	0.10 (0.409)	–	–
QoG	0.08** (0.044)	–	–	–	–
QoG*Asia	0.08 (0.367)	–	–	–	–
ICRG		0.66*** (0.000)	–	–	–
ICRG*Asia		–1.18** (0.024)	–	–	–
Control of Corruption	–	–	–	–	0.014* (0.053)
Bureaucratic Quality	–	–	–	0.026** (0.010)	–
Method of Estimation	OLS	OLS	IV	Panel, Country Fixed Effects	Panel, Country Fixed Effects
R-square	0.68	0.61	0.41	0.39	0.35
Number of Observations	65	87	54	244	244

Notes: GQ is control of corruption in columns (1) to (3) and government effectiveness in column (4).

Control variables: log (Net Development Assistance/GDP); log (Urban Population share of Total Population, and log Developmental CSOs per capita for columns (1) to (4), and : log (Net Development Assistance/GDP), and Inflation Rate; p-values in parentheses.

***, ** and * denote significance at 1, 5 and 10 per cent respectively.

Source: Author's estimates.

B. Testing for Causal Mechanisms

In Section II, we discussed three mechanisms by which governance could affect social development. First, by increasing the level of income, and allowing households to spend more on education and health, better governance could have an income effect on social development. Second, by increasing tax revenue as a ratio of GDP, better governance may allow for greater resources to be mobilized for social sector spending. Last, better governance may allow for greater effectiveness of social sector spending and will therefore allow for greater effectiveness of service delivery for the poor. We test for these three mechanisms explicitly in this subsection, presenting the results in Table 8. First, we examine the validity of these mechanisms for all the regions of the world, and then test for the mechanisms specifically for Asia. We begin with testing for the "income effect"—we include per capita income in the specification set out in equation (1). If the income effect is valid, we would expect the coefficient on per capita to be positive and significant, and the coefficient on GQ to be insignificant. We find that the coefficient on per capita income is positive and significant, and the coefficient on GQ (we use CC as our preferred governance measure) remains positive and significant (column (1)). This suggests that while the "income effect" is important, the other mechanisms are important as well. Testing for the "income effect" specifically for Asia, we find that the interaction term of income with the

Asia dummy is not significant, suggesting that this mechanism works in the same way for Asia as it does for the rest of the world (column (2)).

Table 8: Testing for Causal Mechanisms

	(1) Human Development Index	(2) Human Development Index	(3) Human Development Index	(4) Human Development Index	(5) Human Development Index	(6) Human Development Index
CC	0.05**	0.04**	0.02	0.03	0.05	0.05
	(0.036)	(0.-41)	(0.625)	(0.512)	(0.167)	(0.165)
CC*Asia	–0.08	–0.07	–0.002	–0.02	–0.14*	–0.13
	(0.106)	(0.205)	(0.979)	(0.783)	(0.059)	(0.116)
Asia	0.08*	–0.31	0.14**	–0.21	0.13**	0.27
	(0.072)	(0.346)	(0.032)	(0.523)	(0.026)	(0.109)
Per Capita Income	0.21***	0.21***	–	–	–	–
	(0.000)	(0.000)				
Per Capita Income*Asia	–	–0.02	–	–	–	–
		(0.481)				
Tax Revenue	–	–	0.08***	0.08***	–	–
			(0.001)	(0.003)		
Tax Revenue*Asia	–	–	–	0.13	–	–
				(0.283)		
Public Expenditure on Health	–	–	–		0.12***	0.12
					(0.000)	(0.002)
Public Expenditure on Health*Asia	–	–	–		–	–0.03
						(0.683)
Public Expenditure on Education	–	–	–		0.002	0.03
					(0.946)	(0.514)
Public Expenditure on Education*Asia	–	–	–		–	–0.11
						(0.683)
Method of Estimation	OLS	OLS	OLS		OLS	OLS
R-square	0.85	0.87	0.37	0.41	0.79	0.79
Number of Observations	116	116	49	49	69	69

Notes: CC: Control of Corruption; Control variables: log (Net Development Assistance/GDP); log (Urban Population share of Total Population, and log Developmental CSOs per capita; Tax Revenue and Public Health Expenditure as ratio of GDP, and Public Expenditure Education per capita; p-values in parentheses; ***, ** and * denote significance at 1, 5 and 10 per cent respectively.

Source: Author's estimates.

Testing for the effect of governance on tax revenue mobilization (by including tax revenue), we see that the coefficient on tax revenue is positive and significant, but that the coefficient on GQ is not significant (column (3)). This suggests that the tax revenue mechanism is particularly strong, and this may be a key mechanism by which governance affects development. Next, we look at the social sector spending mechanism by including public expenditures on health and education. We see that the coefficient on public health spending is positive and significant, but that the coefficient on public education spending is not. Interestingly, the coefficient on GQ is not significant. This suggests that the social spending mechanism is also important for how governance affects development outcomes (column (5)). We do not see any difference in the way these two mechanisms operate for developing Asia as compared to the rest of the world, as evident by the lack of significance of the interaction terms of tax and social expenditures with the Asia dummy (columns (4) and (6)). Overall, our results suggest that governance has affected social development mostly by leading to greater mobilization of resources and the effectiveness of spending of these resources for health, with the "income effect" of governance on social development being less important.

V. CONCLUSIONS AND POLICY IMPLICATIONS

In this paper, we study the relationship between governance quality and development outcomes with a focus on developing Asia. We look at a range of development indicators: headcount poverty, human development, gender inequality, infant and maternal mortality, literacy, provision of sanitation, and quality of infrastructure. In our empirical analysis, we use disaggregated measures of governance to capture different dimensions of governance, and to allow for the possibility that different dimensions of governance such as administrative capacity, legal infrastructure, and state accountability can affect development indicators differentially. We explore the causal mechanisms by which governance can affect development, and conduct a range of robustness tests to assess whether governance is causally related to better social development.

Our econometric analysis shows a clear role for governance in affecting most development outcomes except schooling levels. This is particularly evident for administrative capacity and legal infrastructure, and less evident for voice and accountability. However, we find that the benign relationship between governance and development is weaker for Asia for several of the development indicators. We also find that the key mechanisms by which governance affects development is increasing the mobilization of domestic resources as well as increasing the effectiveness by which these resources are spent on social sectors. Along with the fact that governance quality is lower in Asia than in other regions of the world (except sub-Saharan Africa), this suggests that improvements in governance along with the strengthening of the mechanisms by which governance affects social development can deliver clear gains in social development in developing Asia.

Our findings have three clear policy implications. Firstly, measures that improve governance systems around state administrative capacity and state legitimacy – such as improvements in the quality of the bureaucracy that lead to better public implementation capacity and stronger anti-corruption initiatives that lead to lower leakages in public goods provision – can lead to gains in social development, such as lower infant and maternal mortality, and reductions in income poverty. Secondly, give that governance quality is lower in Asia than other regions of the world (except Sub-Saharan Africa) and that the mechanisms linking governance and development are weaker in developing Asia, our findings suggest that improvements in governance along with the strengthening of the mechanisms by which governance affects social development can deliver particularly strong gains in social development in developing Asia. Finally, our results suggest that while improvements in voice and accountability have an intrinsic value of their own, they have less of a role to play in affecting development outcomes as compared to state administrative capacity and legal infrastructure. For policy-makers in countries with weak governance environments who face choices on which dimension of governance to act on, the highest payoffs in terms of gains in social development may be in targeting improvements in the functioning of the bureaucracy and in the quality of regulatory and ‘rule of law’ institutions.

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Governance and Development Outcomes in Asia

This paper examines whether governance has any systematic effect on development outcomes such as human development, gender equality, infant and maternal mortality, poverty, access to sanitation, literacy levels and infrastructural provision, with a focus on developing Asia. It finds that governance has significant positive effects on development indicators, but that the effects are not as strong for developing Asia in some cases. In general, state administrative capacity and legal infrastructure matter more than state legitimacy and accountability for fostering development.

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