The Quality of Governance
How Have Indian States Performed?

by

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"Search engines find hundreds of thousands of web pages, and thousands of scholarly articles, related to governance. I have no choice but to be highly selective, and have made the selection idiosyncratically to fit my immediate interests."

Avinash Dixit
Lawlessness and Economics, 2004

1. Introduction

As the quotation from Avinash Dixit suggests, we have been engulfed by an explosion of interest in the subject of governance during the past thirty years or so. This explosion stems from a widespread belief that much of what is wrong in the world, especially in the less developed countries, has to do with failures of governance. But what do we mean by governance, and what is 'good' governance? Can the quality of governance be measured? And how do state governments in India measure up by such a measure? These are the questions we address in this paper. Governance means different things to different people. Like Dixit, we too will have to be extremely selective in our choice of the concept of governance (Section 2), in developing a measure of the quality of governance, tailoring it to the purpose in hand (Section 3), and in applying that measure for an assessment of the governance performance of Indian states (Section

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4). In section 5 we look at the relationship between governance and growth. Section 6 concludes.

2. What is Good Governance?

Danda and Dharma: Weiss (2000) describes how different international agencies and other institutions have interpreted the concept of governance. A similar listing of interpretations is provided in DARP (2009). What comes across is a spectrum of interpretations ranging from a narrow, statist, interpretation which equates governance with what governments do, to a more inclusive definition which refers to the many ways in which individuals, groups, and institutions, both public and private, manage their affairs and resolve conflicts of varied interests in an orderly manner[2].

For our purpose, which is to assess the performance of sub-national governments in India, it is fairly obvious that the narrower, statist definition, that equates governance with what governments do, is the most appropriate. Central to this statist concept of governance is the necessity of authority, but authority that is not an end in itself. Good governance implies that authority must be deployed, and even necessarily based on, a larger purpose - the good of the people being governed.

In *Leviathan*, that classic treatise on the management of power, written with an eye on the risks and costs of civil war in a nascent bourgeois society, Hobbes (1651) argued that the monarch must have enough authority to enforce peace, so that he can protect the safety and prosperity of the people. Even Machiavelli, generally believed to have authored the most evil and cynical treatise on statecraft ever written, repeatedly stressed that his Prince had to build the state on the goodwill of the people.[3] This duality in the concept of governance did not begin with either Hobbes or Machiavelli. It has remained a constant feature of all statist conceptions of governance from

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[2] See also Shome (2012)

[3] See the Introduction by George Bull to the Penguin edition (Machiavelli 1961). The treatise was originally completed in Italian probably around 1515.

Kautilya's *Arthashastra*[4], written in the 4th century B.C., down to our own times.

The *Arthashastra*, which distilled all of traditional Indian thought on the question of good governance, maintained that it was essential for the king to have coercive authority (*Danda*). It elaborated in great detail on how this was to be established with the help of the army, police, and secret service. But it also stated that the God King had to devote himself to the interests of the people, and that *Danda* had to be exercised not arbitrarily but in accordance with laws codified to ensure fairness, and promote governance for the common good (*Dharma*). To ensure effective application of *Danda* in harmony with *Dharma,* the Arthashastra laid out very careful principles and tests for the selection of ministers and officials, for taxation and public expenditure, and for the maintenance of law and order as the fundamental canons of good governance. The treatise also spelt out in great detail how to control corruption, which could otherwise spread like a cancer through the seven key constituents of the state (*Prakrits*), and destroy the fundamentals of good governance.

Though it was written nearly two and a half millennia ago, the basic principles of the *Arthashastra* are as relevant today as any similar treatise written in our own times. No other work of that period is quite comparable to it for its depth and comprehensive reach as a philosophical treatise cum manual on state craft. But there are other treatise written around the same time that also echoed the *Danda-Dharma* duality of governance. Comparing Kautilya's work with Plato's concept of the optimal Athenian state in Greece, and Lord Shang's treatise on the supremacy of law in China, Spengler (1969) points out that all these writings from the 4th century B.C. emphasized the importance of authority and an order preserving state, responding to the actual or potential conditions of anarchy in their own contexts. But all of them recognized that the goal of the state was the common good, meaning peace, security and prosperity of the people.

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[4] See the translation by L.N. Rangarajan (Kautilya 1969)

This duality also lies at the core of all the statist interpretations of governance referred to earlier (Weiss 2000). It may sound odd at first blush to speak of the coercive powers of the state in democratic societies. But the fact is that all states have coercive powers. The difference is that in successful democracies the coercive powers of the state are not very visible, whereas in authoritarian regimes it is the coercive power of the state that is most visible and not so much the responsibility of pursuing the common good.[5]

Thus, Kautilya's *Danda – Dharma* duality, which Kenneth Arrow has described in our own times as the combination of authority with responsibility (Arrow 1974), provides us with a statist conception of good governance that has remained stable through millennia: the exercise of authority to ensure peaceful conditions, the rule of law and protection of property rights, and public spending financed by reasonable taxation, to promote prosperity of the people. Notice that the focus here is on ends, not means, and this conception of an effective state is eclectic with regard to the means, i.e., the ideological tension between dirigism and liberalism. Thus, Kautilya's conception of an effective state is fairly interventionist, not quite dirigiste perhaps but certainly comparable to the welfare states of contemporary Europe. Yet the goals of his state are remarkably similar to those conceived by Adam Smith, the original grand theorist of the free market system, who wrote:

"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" [6]

[5] Weiss comments on how in recent times the United Nations and other international coalitions have cited the exercise of coercive authority, including violence, towards their own people by authoritarian regimes, i.e., authority without responsibility to pursue the common good, as justifying intervention in the internal affairs of sovereign countries ruled by such dictators

[6] Quoted in Besley T. and T. Persson (2011). See also the Introduction by Andrew Skinner to the Penguin edition of the *Wealth of Nations* (Smith1776,1970). Skinner has argued that while Smith was a great advocate of the free functioning of markets, his conception of the role of the state was not only fundamental to the success of his market system but also not minimalist. A. Skinner, Introduction to the Penguin edition of the Wealth of Nations , Books I to III, Penguin edition, London 1970

The Determinants of Good Governance: We now have the answer to our first question, what is good governance. But before moving on to our second question, measurement of the quality of governance, it is useful to address an issue that is supplementary to the first question, namely, what are the determinants of good governance?

Developing a modern version of the Smithian conception of good governance, Besley and Persson (2011) define what they call the three pillars of prosperity a la Adam Smith: fiscal capacity, judicial capacity, and peace – their focus being the avoidance of internal conflict in a society rather than Smith's focus on the avoidance of external conflict. Using this core concept, Besley and Persson develop a theoretical model of what drives the development of these three pillars, and their relationship with economic development, represented by per capita income in a country. The theory is based on empirical observation, and the predictions of the theory are then tested against empirical data.

Their principal proposition is that development of the three pillars of an effective state and also economic development are all highly correlated because their underlying determinants are similar, and because of positive mutual interaction through feedback loops, similar to Myrdal's concept of cumulative causation. This generates development clusters, the simultaneous development of all the pillars of the state along with economic development in some geographies, and their collective absence in other geographies. In other words, between any two countries at the same stage of development, the one with a higher pillars index is also likely to have faster growth.

Besley and Persson construct an index of the pillars of prosperity, based on sub-indices of the three pillars. Though there are some challenging outliers, including India, their index performs reasonably well against its predicted values, econometrically estimated from the determinants of individual pillars. Along the way, the authors discuss underlying factors such as political polarization, elite capture and

predatory states, the quality of the bureaucracy, etc., that determine how much a state will invest in developing its own capacities.[7]

Some of the key results of the Besley – Persson study are similar to, and underline the robustness of, the conclusions of an earlier seminal study by La Porta R, F. Lopez-de-Silanes, A. Shleifer and R. Vishny (1999) on the quality of governance. Using regression analysis based on a large, cross-country data set, La Porta et. al. attempt to identify the principal determinants of good governance. Their concept of good governance, which is essentially tantamount to an articulation of the Kautilyan concept outlined earlier, includes the following: protection of property rights; perception of corruption; tax rates and tax compliance; relative wage of government staff, size of public employment and government consumption spending; delivery of public goods, as reflected in infant mortality, school attendance, illiteracy, infrastructure quality; and political rights or democracy. Indices of these outcome variables are regressed on a set of potential explanatory variables in different combinations to assess their explanatory power.

Their most important conclusion, similar to Besley- Persson, is that good governance and development are dependant on similar sets of independent variables, and themselves mutually inter-dependant[8]. Among their other important conclusions, good governance is found to be positively correlated with the size of government; English as opposed to socialist, French or German legal roots; protestant as opposed to catholic or Islamic cultural roots; political freedom; and the latitude of a country. It is inversely related to political polarization and ethnic or other social fractionalization. Some of these conclusions are not new, but are now confirmed by rigorous statistical analysis. The role of the protestant ethic in the rise of capitalism, for instance, has been known at least since the time of Max Weber (1958). Others have written about the role of latitude and climate, the temperate

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7. The construction procedure for the index is discussed in more detail in the next section, which deals with issues of measurement. .

8. This leads to problems of multi-collinearity in the regression which the authors address by using different combinations of variables in different regressions.

regions being more conducive to energetic economic activity than the tropics (Gallup, Sachs & Mellinger 1999). The relevance of legal antecedents is less widely known, but it has also been cited by Besley and Persson,

One important theme emerging from the study by La Porta et. al. is the positive correlation of good governance with the size of government. This is clearly at odds with libertarian prescriptions about the size of government (Freedom House 1996) but not necessarily the Smithian view, which is much more subtle. The case against government interventions that distort the market mechanism should not be mistaken as a case for small government. In fact Smith laid great emphasis on the state performing its key functions, so as to enable the market mechanism to work well[9]. In their modern interpretation of Smith, Besley and Persson count, among the productive capacities of the state, the provision of physical and social infrastructure. This can be quite large relative to GDP, and can be considered to be desirable investments in both state development and economic development, so long as they are financed through a sound system of taxation.

Indeed, the libertarian view of small government is itself at odds with the fact that, compared to the less developed countries, the size of government relative to GDP is much higher in the advanced countries and in some of the best performing emerging market economies (Sato 2004). At the same time, in the welfare states of Europe today we are seeing the frightening consequences of public spending that is persistently running ahead of revenue, forcing governments into more and more sovereign debt[10]. In an interesting analytical paper Meltzer and Richard (1981) have given the political - economic conditions under which the Wagner process of rising state share of public expenditure might stop. They suggest that the size of public

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9. See the remarks in footnote 6 above.

10 See in this context Bird's translation and critical review of the law of the expanding state propounded by the German economist Wagner (Bird 1971). There is now quite a vast literature on the subject, and related work by Peacock and Wiseman (1961) and Baumol (1967). See, for instance, Gemmal N.ed.(1993)

expenditure will keep rising relative to GDP till the income of the median voter catches up with average income, after which the share of public expenditure in GDP will stop rising.

Another important theme in the La Porta et.al., study is the negative impact of polarization and fractionalization. This is further explored by Alesina, Devleesschauwer, Easterly, Kurlat and Wacziarg (2003). They empirically explore for a 190 country data set the effects of social heterogeneity - ethnic, linguistic, religious - as well as polarization between two dominant groups on both governance and growth. The authors point out that cross-correlations between potential explanatory variables, and their different degrees of endogeneity, muddy the econometric results. But the results broadly reinforce the conclusion of La Porta et.al., that both fractionalization and polarization have a negative impact on governance as well as growth. Their conclusion on the effect of polarization was also later confirmed by Besley & Persson, The latter's idea of development clusters was also implicitly anticipated in the collinearity and endogeniety of explanatory variables reported by Alesina et. al..

Further pursuing this issue, Charron (2009) asks whether the quality of governance is better served by ethno-federalism or more integration when there is ethnic fractionalization. Using statistical tests based on alternative measures of the quality of governance, he concludes unambiguously that ethno-federalism is the superior policy alternatve. However, Tanzi (2001) cautions that unless certain conditions are satisfied decentralization, what ever the form, could be counter productive. An interesting aspect of the polarization – fractionalization discussion is how it affects the fiscal behavior of governments. Sarr and Wick (2010) use a game theoretic model to derive the result that weak states will invest more in public goods than a strong ruler. However, the data analyzed by Besley - Persson show the opposite is true. Strong states develop strong fiscal capacity, and invest the most in "common interest" public goods, including security. Redistributive states that need to balance competing political interests may also develop strong fiscal capacity, but have to spend more on redistribution, including tax expenditures, and have less for

public goods. Weak states have low fiscal capacity, and hence little to to states that invest more in the 'order' institutions like administration and justice spend on public goods. On a related theme, Rothstein and Stolle (2008) provide evidence to suggest that states that invest more on the political institutions of the state have less social capital, trust, compared.

Another interesting question is the relationship between competition and governance. Greenwood (2004) has argued in the East Asian context that competition could genertae a "race to the top" in good governance, and that this might have a profound impact on the political development of the region. Competition induced by globalization has helped improve policy and governance in many countries, as well as sub-national geographies like States in India (D'souza 2011). Some have been more successful than others in improving the investment climate and strengthening government-business cooperation, thereby attracting more private investment, boosting productivity and increasing growth. Studies of growth convergence-divergence across countries have accordingly sometimes tried to control for budgetary variables, investment climate and other governance factors as key elements in explaining growth differentials.

However, the question of the impact of competition on governance is quite complex, because the pressure on governments to perform has also contributed to some forms of unhealthy competition. For example, the incentives States use to attract private investment in India include tax exemptions and tax holidays. Predictably, this has

led to a 'race to the bottom' with large losses of public revenue for all competing States, and consequent contraction of the fiscal space for development spending.

Finally, a theme not directly arising from La Porta et. al. but certainly Kautilya, and indeed central to the discourse on quality of governance, is corruption. Analyzing data from a 2005 Tranparency International survey of perceptions of corruption in Indian states, Charron (2010) concludes that high per capita income, high literacy and greater decentralization to local governments are all inversely related to perceived levels of corruption. This is consistent with the much cited Paolo Mauro (1995) study on corruption, which concluded that corruption is inversely correlated with private investment and growth. Tanzi and Dawoodi (2002) cite several studies to argue that corruption is positively correlated with higher levels of public investment, as opposed to 'operation & maintenance' spending, but inversely correlated with productivity of public investment and growth. These studies provide further empirical support for the Besley – Persson theory of positive development clusters and joint movement of good governance and growth. Charron also finds that other factors like fractionalization, inequality, or media exposure do not have much effect on the incidence of corruption.

What about policies to contain corruption? In her classic study of the market for corruption, Rose Ackerman (1978) had argued that introducing competition among bureaucrats would lower rents, i.e., the price of corruption. Ades and Di Tella (1999), analyze the other side of the market, the demand for corruption. They derive the result that when producers face competitive markets, lower protection, etc. then rents are lower, and hence also the level of corruption (bribes). This theoretical result is confirmed empirically by cross section analysis as well as time series analysis, controlling for fixed effects, which show that corruption is higher in countries where competition is restricted by either natural factors or policy induced barriers to entry.

3. Measuring the Quality of Governance

Alternative Approaches to Measuring the Quality of Governance

We turn now to the question of measurement. Measuring the quality of governance is exceptionally challenging. As the foregoing discussion makes clear, governance is a very complex multi-dimensional phenomenon, even in its narrow, statist interpretation. Each dimension could have several additional sub-dimensions, each represented by one or more different variables. Moreover, there are some dimensions that are not directly observable. Particularly challenging is the task of combining all the indicators and sub-indicators into a single aggregate index of the quality of governance that can capture the multi-dimensional features of a government in all its complexity. In analyzing the determinants of good governance, some of the studies cited earlier have identified indicators of individual dimensions of governance, which they have then sought to relate to other independent variables or other indicators of governance, e.g., La Porta,et.al (1999). Barring Besley-Persson (2011), none of these studies have attempted to aggregate the individual indicators into a single index of the quality of governance

There is a separate class of studies that have attempted such aggregation. They map the selected set of indicators onto a few major dimensions of governance and combine them into a single index using some aggregation rule. However, two opposite approaches have been adopted in the selection of indicators. In one approach, which seeks to use all available information, hundreds of indicators are mapped onto the major dimensions. In the other parsimonious, approach, only some indicators are adopted to represent the major dimensions of governance.

Best known among the former is the series of worldwide governance indicators (WGI) that Kauffman and associates (KKM) have been publishing, covering the period from 1996 onwards (Kauffman, Kraay, and Mastruzzi 2007). Currently the WGI gives governance ratings for 212 countries, based on some 310 variables, derived from

33 different agencies, public, private, and non-government organizations, totaling some 10,000 plus data points. The 310 variables are aggregated to six governance dimensions: voice & accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption. The individual indicators are aggregated into ratings for these six dimensions and the average rating using an unobserved components model. This model attaches weights to individual variables which reflect the precision of the respective data sources.

The KKM effort is ambitious in using all available data on governance. We feel this is also its major weakness. About half the variables are objective data from secondary sources. The rest are based on perception surveys of varying quality and reliability across data sources. The problem is not one of precision but reliability. An indicator may be perfectly precise, yet quite unreliable if based on perceptions of an unrepresentative set of observers. Olken and Pande (2011) have given an excellent critique of such perception survey based indicators. With such heroic aggregation of huge volumes of data, some objective and others subjective, some reliable and others not so reliable, it is not clear in the end what exactly the KKM measures are capturing, Reliability apart, there is also a question whether, with such large data overload, the aggregate indicators reasonably accurately reflect the actual quality of governance in a country. In any case, the variables used by KKM are national level variables, and sub-national data would not be available for most of them.

The opposite approach is to rely on a few key indicators that can transparently capture the essential dimensions of governance, as in Besley and Persson (2011). It was mentioned earlier that, following Adam Smith, Besley-Persson maintain that prosperity depends on three key pillars of good governance: fiscal capacity, legal capacity, and peace. Adopting a few key indicators for these three pillars, they construct a "pillars of prosperity" index (POP) for a set of 184 countries that is impressively parsimonious. They first select variables from available secondary data to represent individual pillars. For

instance, IMF based tax data on the revenue share of income tax is used as a measure of fiscal capacity[11]. These representative variables are then scaled to a (0 – 1) range by subtracting the minimum country value from the maximum, and dividing by the sample range. The POP for a country is then given by the un-weighted (or equally weighted) average value of indices for the three pillars, which also lies in the (0 - 1) range.

Measuring the Quality of Governance in Indian State

To the best of our knowledge, the present exercise is the first attempt to rate the quality of governance in Indian states. However, two studies relevant to this issue need to be cited. In 2009, the Department of Administrative Reforms, Public Grievances & Pensions of the Government of India (D.A.R.P 2009) prepared a framework for assessing the governance performance of States. Their proposed framework is similar to the KKM approach in that it calls for a large volume of data to assess the quality of governance of Indian States in five major dimensions: political, legal-judicial, administrative, economic, and social-environmental. These five dimensions are characterized in terms of 18 components, which are in turn represented by 123 different indicators. The indicators are those actually or potentially available for Indian States, which are of course different from those used by KKM. Also, the D.A.R.P framework is designed to measure processes of governance rather than outputs or outcomes. A third difference compared to KKM is an aggregation formula where initial ratings on a 5-point scale are transformed into percentage scores.

Of the 123 indicators, 75 are perception scores requiring primary surveys. The rest are secondary data. Hence, the framework is subject to all the limitations of perception based ratings discussed earlier (Olken & Pande 2011). Also, the results of this framework are likely to be quite sensitive to the aggregation formula. But the main point to note about the D.A.R.P proposal is that it was never implemented beyond a pilot attempt. Presumably, the proposal was found to be

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[11] For the complete list of variables used for the three pillars see Besley & Persson (2011).

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unworkable in practice because of the large volume of expensive survey work it would entail to estimate all the perception indicators.

The other study is the latest report on Economic Freedom of the States of India or EFSI (Debroy, Bhandari and Aiyar 2011). This index, which Debroy and Bhandari have been publishing for almost a decade now, is based on the Freedom House Economic Freedom of the World index, now taken over by the Fraser Institute. Debroy and Bhandari have adapted the world index to suit the context of the States in India. They assess economic freedom on the basis of three basic pillars: size of government, legal structure and property rights, and regulation of labour and business. The Freedom Index does not purport to be a measure of the quality of governance for development. However, the authors claim that the two are highly correlated. Underlying this claim is a libertarian belief that less government is better than more government for development. We do not share this belief. Indeed, there is much evidence to the contrary[12]. Nevertheless, we consider the EFSI an important exercise which has several similarities with our own from a methodological perspective.

Choice of Indicators

Our framework of measurement rests on three basic pillars, as also in the case of Besley-Persson and Debroy-Bhandari. However, our pillars are different. They are aligned to our statist concept of governance, i.e., what governments do, as articulated in terms of the *Danda – Dharma* framework. Accordingly, our pillars are the three branches of the state, i.e., the executive, the judiciary, and the legislature. Given our focus on a developmental state, the executive pillar is further expanded into four key dimensions: delivery of infrastructure services, delivery of social services, fiscal performance and maintenance of law and order. In addition we have the delivery of legal services under the judicial pillar, and the quality of the legislature under the legislative pillar. Thus we have six main dimensions of governance. Notice that the coverage of our six

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[12] See the earlier discussion on determinants of good governance in section 2 above, in particular the work of La Porta et. al.(1999) and others cited in the discussion.

dimensions correspond fairly closely to the pillars or dimensions of governance identified by Besley & Persson (2011), La Porta et. al., (1999), Kauffman et.al.,(2006) and others. This reflects a broadly shared understanding of what constitutes good governance in a developmental context. One or more performance indicators are selected for each of these services. The choice of indicators is opportunistic, depending on what reasonably reliable data are available for the seventeen major States of India used for this exercise. Outcome variables are preferred, but where these are not available we have used output or even input variables. The list of indicators selected for each of these six branches of the government, totaling eighteen, is given in Table 1.

Under the executive pillar of government, for infrastructure services we have used indicators of the availability of potable water, sanitation, roads, and power. For social services we have used standard indicators of health outcomes and education outcomes or outputs. For fiscal performance we have used indicators of a State's development spending and own revenue effort. Among the range of possible fiscal indicators, these two are considered the most appropriate. For law and order we have used indicators of violent crime, police cover and police behavior. Police behavior is captured by a variable called 'complaints registered against police per person'.

For judicial services we have used a measure of timely completion of trials, delays in court proceedings being the major weakness of the judicial system in India. Finally, for quality of legislature we have used a measure of the proportion of legislators with serious criminal charges and the proportion of women legislators. It is now widely accepted that feminization of governance (through higher representation of women in legislatures) leads to better development outcomes in specific services like education, health and sanitation (Chattopadhyay & Duflo 2004). There is also field evidence from India which suggests that larger representation of women in elected bodies leads to their improved performance (Nagarajan and Nag 2011). The data sources used for each of these indicators is given in Appendix 1.

Table 1 Indicators of Quality of Governance

Dimensions	GOVERNANCE PERFORMANCE INDEX					
	Infrastructure Service Delivery	**Social Service Delivery**	**Fiscal Performance**	**Law and Order**	**Judicial Service Delivery**	**Quality of legislature**
Indicators	**Water supply and sanitation** 1. *Households with safe drinking water(%)* 2. *Households with improved sanitation(%)*	**Health** 1. *Infant Mortality Rate* 2. *Maternal Mortality Rate* 3. *Life Expectancy at Birth*	**Development Expenditure as percentage of Total Expenditure**	**Rate of Violent Crimes**	**Proportion of total trials in all courts completed within 3 years (%)**	**Proportion of MLA's with serious criminal charges pending(%)**
	Per capita power consumption	**Education** 1. *Literacy rate* 2. *Gross Enrolment Rate* 3. *Average Years of Schooling*	**Own Revenue GSDP Ratio**	**Complaints registe red against police per person**		**Proportion of women MLA's(%)**
	Road length per square kilometer			**Police strength per lakh population**		

Transformation of Indicators

One of the main conclusions emerging from the discussion on determinants of good governance in section 2 above is the strong correlation between good governance and development, measured here in terms of per capita GSDP. This is partly because of their dependence on the same underlying drivers and also because of their mutual inter-dependence, giving rise to what Besley - Persson have called development clusters. The existence of such correlation between governance indicators and per capita income at the level of Indian States is confirmed in Table 2.

This can give rise to a governance rating bias in favor of more developed States. A higher value of some indicator of governance may simply be attributable to the higher level of development of the State. To isolate the quality of governance, independent of the level of

development, we have transformed the raw indicators by the following steps.

Table 2: Correlation Matrix of Governance Indicators for Indian States

	Water	Sanitation	Road	Power	Literacy	Enrolment	Years of Schooling	IMR	MMR	Life Expectancy at Birth	Dev Exp - Total Exp (%)	Own Tax Revenue - GSDP Ratio (%)	Violent Crimes	No. of Complaints Registered Against Police	Police Strength in per lakh population	Trials completed in 1-3 years	MLA's with serious criminal charges pending (%)	Women MLA (%)	GSDP per capita
Water	1.000																		
Sanitation	0.005	1.000																	
Road	-0.045	0.478	1.000																
Power	0.378	0.200	-0.501	1.000															
Literacy	-0.005	0.822**	0.383	0.291	1.000														
Enrolment	-0.429	-0.100	-0.047	0.069	0.220	1.000													
Years of Schooling	0.128	0.744**	0.245	0.462	0.813**	0.142	1.000												
IMR	-0.182	0.828**	0.518*	-0.051	0.822**	0.138	.712**	1.000											
MMR	0.200	0.687**	0.200	0.329	0.828**	0.168	.845**	.807**	1.000										
Life Expectancy at Birth	0.261	.840**	0.244	0.377	0.767**	-0.158	.846**	.797**	.852**	1.000									
Dev Exp - Total Exp (%)	-0.138	-0.581*	-0.376	-0.040	-0.380	0.292	-0.336	-0.510*	-0.271	-0.584*	1.000								
Own Tax Revenue - GSDP Ratio (%)	0.126	0.228	0.075	0.259	0.310	.531*	0.481	0.258	0.383	0.260	0.177	1.000							
Violent Crimes	0.578*	-0.070	-0.115	0.561*	-0.101	0.017	0.059	0.275	0.034	0.410	-0.064	0.184	1.000						
No. of Complaints Registered Against Police	-0.123	-0.249	0.276	-0.236	-0.246	0.455	-0.317	-0.250	-0.362	-0.420	-0.095	0.189	0.165	1.000					
Police Strength in per lakh population	0.056	0.237	-0.312	0.606**	0.233	-0.149	0.462	0.015	0.119	0.293	-0.262	-0.007	0.022	-0.335	1.000				
Trials completed in 1-3 years	0.363	0.369	0.227	0.389	0.207	-0.177	0.450	0.106	0.156	0.333	-0.348	0.410	0.436	0.046	0.272	1.000			
MLA's with serious criminal charges pending (%)	0.225	0.279	0.172	0.436	0.080	-0.268	0.277	-0.059	0.008	0.253	-0.090	0.004	0.048	-0.167	0.480	0.364	1.000		
Women MLA (%)	0.230	-0.239	-0.147	-0.232	-0.414	-0.258	-0.454	-0.299	-0.298	-0.345	0.111	-0.301	0.085	-0.130	-0.208	-0.183	0.270	1.000	
GSDP per capita	**0.366**	**0.492***	**-0.123**	**0.678****	**0.568***	**-0.008**	**0.667****	**0.298**	**0.659****	**0.562***	**0.060**	**0.251**	**0.383**	**0.449**	**0.391**	**0.193**	**0.337**	**-0.036**	**1.000**

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

Step 1: Using data for the seventeen States, we have estimated for each indicator the equation $Y = a + ßX$, where Y represents the indicator of interest and X is the natural logarithm of per capita Gross State Domestic Product (GSDP). This equation gives us an expected Y for each state, which may be denoted as Y_i^e. We also examine whether the estimated coefficients are statistically significant. In case they are, we proceed to Step 2, or else to step 3.

Step 2: Compute $Z_{i1} = \{(Y_i - Y_i^e)/ Y_i^e\} \times 100$, which gives the percentage deviation of the actual value of the indicator Y_i for State i from its expected value.

Step 3: Compute $Z_{i2} = \{(Y_i - \text{Average } (Y)\}/ \text{Average } (Y)\} \times 100$, the percentage deviation of the actual value of the indicator for state i from the average value of this indicator for all states.

Thus we obtain a set of transformed indicators, the transformation procedure depending on whether or not the relationship between the indicator and per capita GSDP is statistically significant.

Step 4   The range of all the transformed indicators lie between (-) 100 and (+) 100. We add 100 to each of these transformed indicators to ensure non-negativity of these transformed indicators, without altering the relative position (rank) of the states.

Step 5: Finally, for all the negative indicators, e.g. , infant mortality rate, maternal mortality rate, rate of violent crimes, percentage of MLA's with serious criminal charges, etc., we take their reciprocal values such that higher values of all indicators represent an improvement.

Construction of the Quality of Governance Index

Quality of governance indicators have been constructed from the actual indicators as well as their transformed values, enabling comparisons of governance performance with and without the impact of development. Furthermore, since the results may be sensitive to the particular aggregation method adopted, and each method has its advantages as well as disadvantages, we have computed the quality of governance index using three different methods of aggregation: (i) Principal component analysis, (ii) average of the sum of ranks (modified Borda scores), and (iii) average of the average of ranks. This enables us to test the robustness of our quality of governance ranks of the different States. The three methods are described below.

i.   *Principal Component Analysis (PCA)*

Principal component analysis is the best known technique for multivariate analysis. The central idea here is to reduce the dimensionality of a data set in which there are a large number of interrelated variables, while retaining as much as possible of the variation (Joliffe 2002). This technique summarizes the variation in the data in the form of uncorrelated components (vectors) called principal components. The eigen vector corresponding to the maximum eigen value of the correlation matrix of the indicators gives the required factor loadings (weights).

The composite index for a particular State may be obtained by linearly combining the standardized indicator values, the weights being the corresponding elements of the eigen vector. The first principal component (factor), linearly dependent on the constituent variables, accounts for the maximum variation in the data. Each successive components account for progressively smaller

components of the variation. Since the first principal component has the property of having the largest correlation with the original data matrix, the successive components are generally ignored.

This method is a useful technique for summarizing multi - dimensional data. However, the standardization of variables, which the technique uses as a first step to eliminate the bias of scale, involves considerable loss of information on the absolute scale of variance of some indicators compared to others as it equalizes mean and variance of all the indicators (Kundu, 1984). This technique also gives higher weights to those indicators that have higher correlations with other selected indicators though such weighting may not be justified by the intrinsic importance of the indicator. The technique is often defended on the ground that better correlated indicators should be the targets of policy intervention because of their apparent potential to bring about substantial changes through their impact on other indicators. However, there is an implicit assumption about causality in this argument which may or may not be justified.

ii.   *Average of the sum of ranks:*

This is a variant of the Borda count method that derives its name from the 18th century French mathematician and political scientist Jean Charles de Borda. The Borda count is a form of preferential voting where voters rank candidates in order of preference and the rankings are converted into points. Candidates score one point for being ranked last, two for being next to last and so on. The candidate who receives the most number of points is declared the winner. Thus, this method tends to elect the most broadly acceptable candidate, rather than the one supported by the majority (Sandler 2001, Gill et. al, 2002).

In our adaptation of this technique for the present exercise, we have given 17 points to the state ranked first for a particular indicator, 17 being our sample size. The second rank holder receives 16 points and so on until the worst performing state receives just 1 point. This procedure is repeated for all the indicators. The points received by the states under each dimension are then added up to give us the sub-index of quality of governance for that dimension. The final index of quality of governance is obtained by adding up the sub-indices and then dividing by six, the number of dimensions of governance. An obvious limitation of this approach is that those dimensions that have more underlying indicators will get a proportionately higher weight in the final index, though this may have no intrinsic justification.

iii.   *Average of the average of ranks*

Here again we follow a similar system of awarding points corresponding to the relative position of states in each indicator. However, the sub-index for each dimension is arrived at by taking the average of the points for each indicator relating to that dimension. The final quality of governance index is an average of these sub-indices. So basically what we have here is an average of the average of ranks (points) under each dimension, which is a correction for the bias mentioned in the adaptation of the Borda score method.

As mentioned above, the three aggregation methods are applied to the actual indicator values as well as their transformed values. Therefore, we have six indices of the quality of governance for Indian States. It is to be noted that in each case the aggregation of the sub-indices for six dimensions to arrive at the final quality of

governance index is done by applying equal weights to each dimension (i.e., taking the un-weighted average). In this we follow Besley & Persson (2011) and also Debroy & Bhandari (2011), the rationale being that there is no *a priori* reason to consider a particular branch of governance as being more important than another.

4. The Governance Performance of Indian States

Table 3 gives us governance rankings of States by the three methods described above, and with and without the impact of development on governance[13].

Looking first at the ranking as per the actual data, the first point to note is that the set of better governed States at the top, and the weak governance performers at the bottom are pretty stable across all the three methods, though there are rank changes within these groups in comparing one method with another. In rankings by Principal Component Analysis, Punjab, Haryana, Andhra Pradesh, Gujarat and Tamilnadu are the five best performing states. In the Modified Borda Score ranking, Kerala moves into third place while Andhra Pradesh slips to seventh place. The other four states in the top five remain the same. In the Average of Averages ranking, Andhra now moves up to the first rank, while Gujarat slips to sixth rank with Kerala at number five. Thus, six States between them occupy the first five ranks in all three methods: Andhra Pradesh, Gujarat, Haryana, Kerala, Punjab, and Tamilnadu. Similarly, at the lower end seven States among them account for the bottom five ranks in all the three methods: Assam, Bihar, Jharkhand, Madhya Pradesh, Orissa, Uttar Pradesh, and West Bengal. Thus, the quality of governance ranking of States based on the actual indicators data seems quite robust. Based on

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[13] The Quality of Governance indices of States, based on actual values of indicators and their transformed values ,are given in Appendix 2. The appendix also gives the GSDP per capita of the States and the correlation coefficients of actual and transformed value indicators with GSDP per capita.

the three methods we now have a pretty good idea of which States are the best governance performers, and which ones the weakest.

Table 3. Governance Ranking of States

Rank	a. Principal Component Analysis Ranking	
	Actual Data	**Transformed Data**
1	Punjab	Punjab (0)
2	Haryana	Haryana (0)
3	Andhra Pradesh	Andhra Pradesh (0)
4	Gujarat	Tamil Nadu (+1)
5	Tamil Nadu	Rajasthan (+2)
6	Maharashtra	Madhya Pradesh (+5)
7	Rajasthan	Gujarat (-3)
8	Kerala	Karnataka (+1)
9	Karnataka	Maharashtra (-3)
10	Chhattisgarh	Orissa (+2)
11	Madhya Pradesh	Chhattisgarh (-1)
12	Orissa	Uttar Pradesh (+1)
13	Uttar Pradesh	Kerala (-5)
14	Assam	Bihar (+2)
15	West Bengal	Assam (-1)
16	Bihar	West Bengal (-1)
17	Jharkhand	Jharkhand (0)

Rank	b. Modified BORDA Ranking	
	Actual Data	**Transformed Data**
1	Tamil Nadu	Punjab (+1)
2	Punjab	Tamil Nadu (-1)
3	Kerala	Kerala (0)
4	Haryana	Karnataka (+4)
5	Gujarat	Bihar (+12)
6	Maharashtra	Maharashtra (0)
7	Andhra Pradesh	Madhya Pradesh (+6)
8	Karnataka	Andhra Pradesh (-1)
9	Rajasthan	Haryana (-5)
10	Chhattisgarh	Uttar Pradesh (+2)
11	West Bengal	Orissa (+3)
12	Uttar Pradesh	West Bengal (-1)
13	Madhya Pradesh	Gujarat (-8)
14	Orissa	Assam (+1)
15	Assam	Rajasthan (-6)
16	Jharkhand	Chhattisgarh (-6)
17	Bihar	Jharkhand (-1)

Rank	c. Average of Averages Ranking	
	Actual Data	**Transformed Data**
1	Andhra Pradesh	Punjab (+1)
2	Punjab	Andhra Pradesh (-1)
3	Haryana	Tamil Nadu (+1)
4	Tamil Nadu	Kerala (+1)
5	Kerala	Haryana (-2)
6	Gujarat	Karnataka (+1)
7	Karnataka	Madhya Pradesh (+7)
8	Maharashtra	Orissa (+3)
9	Rajasthan	Uttar Pradesh (+4)
10	Chhattisgarh	Rajasthan (-1)
11	Orissa	Maharashtra (-3)
12	Assam	Gujarat (-6)
13	Uttar Pradesh	Bihar (+3)
14	Madhya Pradesh	Chhattisgarh (-4)
15	West Bengal	Assam (-3)
16	Bihar	West Bengal (-1)
17	Jharkhand	Jharkhand (0)

However, the rankings based on the actual indicator values do not correct for the impact of development on governance. Rankings based on the transformed indicators, which make this correction, are shown in the second columns of each panel. The figures in parenthesis show the gain or loss in rank with the correction, with the color code making it easy to spot the gainers (green), losers (red), and those with no change (yellow).

In the rankings according to Principal Component Analysis, the top three States, i.e., Punjab, Haryana, and Andhra Pradesh, along with Jharkhand at the lower end retain their positions even after the correction. This implies that these States are performing at par with the expected level of performance at their level of development. Seven States improve their ranks after correction, implying that they are performing better than expected for their level of development. The largest gainer is Madhya Pradesh (5 ranks). Most of the States here are among the poorer States, suggesting that their weak governance performance in absolute terms is also a reflection of their low level of development. The biggest losers here are Kerala (5 ranks), followed by Gujarat and Maharashtra (3 ranks each). The implication here is that their high level of governance performance is partly a reflection of their high level of development, a positive legacy from the past.

In comparing the Modified Borda Score rankings with and without correction, Kerala and Maharashtra maintain their ranks. Seven States improve their rank, led by Bihar (+12), Madhya Pradesh (+6) and Karnataka (+4), implying that their governance performance is well above that expected for their level of development. There is a decline in rank after correction for as many as nine States, led by Gujarat (-8), Rajasthan (-6) and Chhattisgarh (-6), indicating that their level of development has had a strong positive impact on their quality of governance.

Finally, in the comparison of Average of Averages rankings with and without correction for per capita GSDP, only Jharkhand maintains its rank after correction. Eight States gain rank, led by Madhya Pradesh (+7), Uttar Pradesh (+4), and Orissa (+3). They are performing above their expected level by this measure. Equally, eight States lose rank, including Gujarat (-6), Chhattisgarh (-4), and Maharashtra (-3), implying that development has had a strong positive impact on their governance quality when evaluated by this method.

In summary, the following points are worth recapitulating. The Quality of Governance rankings based on actual indicator values is pretty stable across different ranking methods, both at the top and at the bottom. This suggests that the rankings give us a fairly robust picture of which states have strong governance performance, and which states are relatively weak. There are some States which lose rank significantly when indicators are corrected for per capita GSDP, indicating a strong positive impact of the level of development on quality of governance. Since the current level of development of a State is the cumulative outcome of its development history over the years, this points to a positive legacy of development and governance inherited from the past. This is especially so in the case of Gujarat, Maharashtra and Chhattisgarh. For some measures we also see this in the case of Kerala and Haryana.

Conversely, the quality of governance is better than expected for their level of development in some States. It is encouraging that this is especially evident in some less developed States like Bihar, Uttar Pradesh, Madhya Pradesh, and Orissa. It implies that their current governments are making a strong effort to overcome their negative legacy from the past.

5. Governance and Growth

The literature on the determinants of good governance reviewed in section 2 indicates that there is a strong correlation between governance and development, as reflected in per capita income. This is partly attributable to growth and governance having the same underlying drivers, and partly to their mutual interaction through feedback effects. For instance, higher incomes may facilitate better governance through larger pools of public resources for economic and social expenditure. Equally, more efficient allocation of public resources in cases of good governance can also eventually lead to higher incomes. Such co-movement and interdependence of development and governance has led to the Besley- Persson (2011) concept of development clusters. This correlation between governance quality and development is also confirmed by our analysis of the quality of governance in Indian States. Indeed, the presence of such correlation required us to construct a set of transformed indicators for assessing the quality of governance after correcting for the effect of development.

Furthermore, the analysis of growth performance of Indian States showed that while growth has accelerated in most States in the recent period, growth is also higher in the more developed

States[14]. These two sets of results would suggest that good governance is not only correlated with the level of development but also the rate of growth. Such a hypothesis is in fact implicit in the classical literature on good governance from Kautilya to Adam Smith, which we discussed in part 2 of this paper.
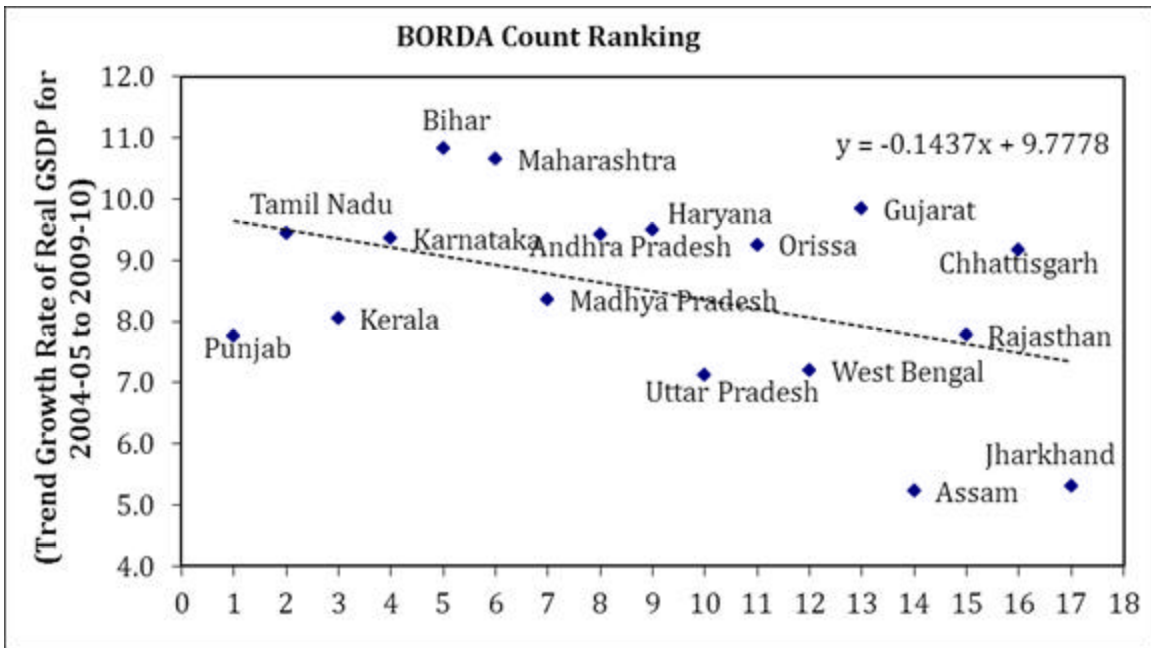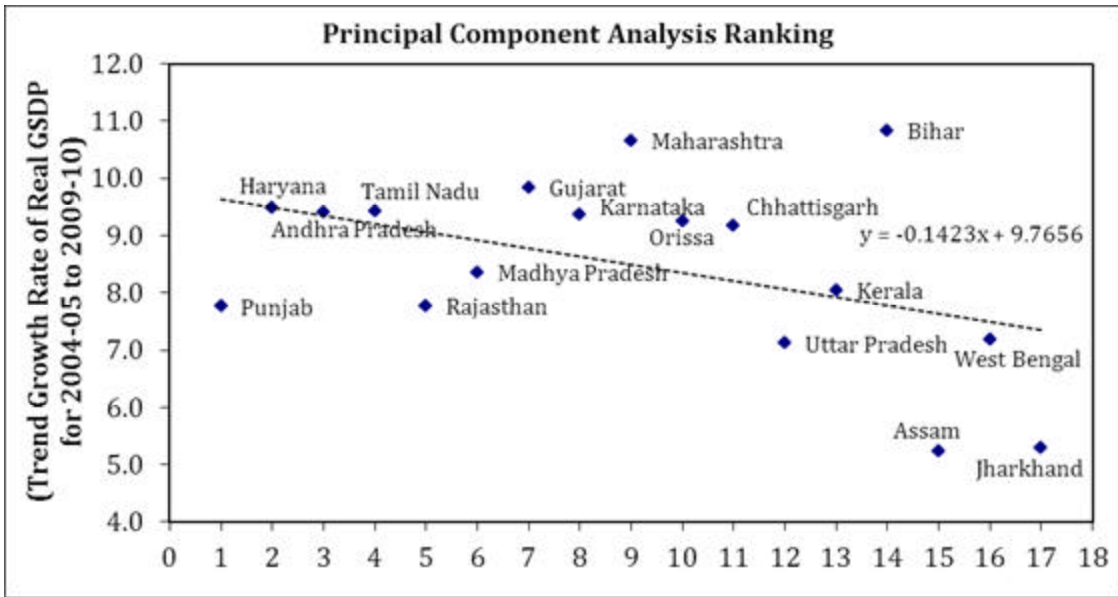
The linkage between growth and governance is also emphasized in the modern political economy literature. At one end of the spectrum, it has been argued that the near absence of governance is one of the main reasons for slow economic growth in Africa (Lipumba 1994, Ndulu and Stephen: 1999). At the other end, there is a large literature which suggests that the spectacular growth of the East Asian economies during the late 20th century is attributable, among other things, to sound macroeconomic management, effective industrial policy focusing on government-business cooperation, and cultural factors such as the Confucian work ethic (Asian development Bank 2007; Chang 1993, 2007; Sato 2004; World Bank 1993).

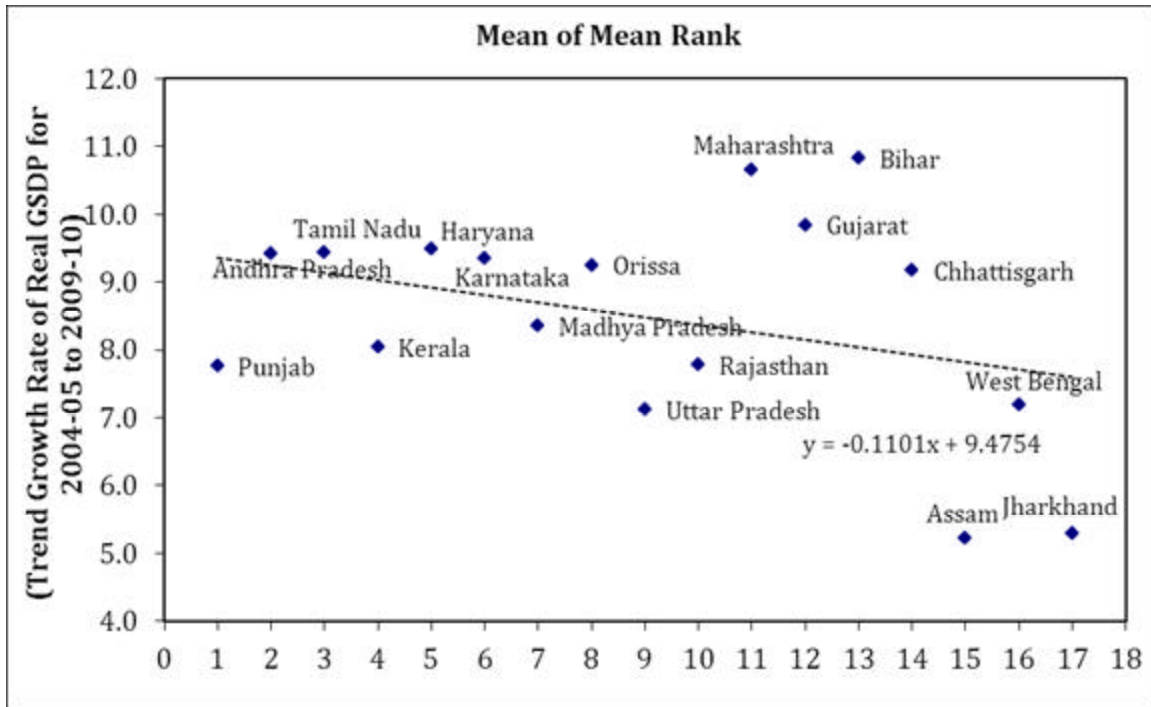It is arguable, therefore, that the positive relationship observed between the governance quality of Indian States and their level of development also extends to the growth performance of

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[14] The per-capita real GSDP growth rate of the top five high income states averaged 8.14 per cent between 2004-05 to 2009-10 as against 7.24 and 5.69 per cent for middle and low income states respectively for the same period.

these States. What does the evidence tell us? As a first step in addressing this empirical question, we examine the scatter plots of States' governance quality against their growth in Figures 1 to 3. This ocular inspection suggests that there is indeed a positive relationship between the quality of governance rank and the rate of growth, i.e., the better the quality of governance, the higher the growth rate. This relationship seems the clearest when growth rates are plotted against the PCA governance rank, but it is also evident when ranks based on the Borda scores or 'average of averages' are used.

However, there is a large spread (variance) around this relationship, suggesting that the statistical relationship may be quite weak. Thus, Bihar is a distinct outlier with a very high growth rate relative to its weak governance ranking. The pattern is similar for other states like Gujarat and Maharashtra. Conversely, there are States like Punjab and Kerala, where the growth rates are unusually low for their governance ranking in some of the plots.

Principal Component Analysis Ranking

Trend Growth Rate of Real GSDP for 2004-05 to 2009-10

- Bihar
- Maharashtra
- Haryana
- Tamil Nadu
- Gujarat
- Andhra Pradesh
- Karnataka
- Chhattisgarh
- Orissa
- Madhya Pradesh
- Kerala
- Punjab
- Rajasthan
- Uttar Pradesh
- West Bengal
- Assam
- Jharkhand

$y = -0.1423x + 9.7656$

BORDA Count Ranking

Trend Growth Rate of Real GSDP for 2004-05 to 2009-10

- Bihar
- Maharashtra
- Tamil Nadu
- Haryana
- Gujarat
- Karnataka
- Andhra Pradesh
- Orissa
- Chhattisgarh
- Madhya Pradesh
- Kerala
- Punjab
- Uttar Pradesh
- West Bengal
- Rajasthan
- Jharkhand
- Assam

$y = -0.1437x + 9.7778$

Mean of Mean Rank

Y-axis: (Trend Growth Rate of Real GSDP for 2004-05 to 2009-10)

States plotted: Maharashtra, Bihar, Gujarat, Tamil Nadu, Haryana, Andhra Pradesh, Karnataka, Orissa, Chhattisgarh, Madhya Pradesh, Kerala, Punjab, Rajasthan, West Bengal, Uttar Pradesh, Assam, Jharkhand

y = -0.1101x + 9.4754

These visual observations have been tested econometrically, using simple OLS regression. In the estimated equations, the growth rates of States for the period 2004-2005 to 2009-2005 has been regressed on the governance scores of States, using the three alternative methods of rating governance. The two functions tested are:

$$Y_t = \alpha + \beta \, PCA_{GI} + u_t \tag{1}$$

$$Y_t = \alpha + \beta \, PCA_{GIT} + u_t \tag{2}$$

where Y_t is trend growth rate of GSDP for the period from 2004-05 to 2009-10, PCA_{GI} is the Governance score, PCA_{GIT} is the Transformed Governance score, and u_t is the error term. As expected, the coefficients of the governance scores have the right

signs in all cases, but they are statistically significant the 10% level only for the PCA ratings of governance[15].

The estimated equations are:

$$Y_t = 8.4837 + 1.2664\, PCA_{GI} + u_t \qquad (3)$$
$$(0.3653) \quad\ (0.6693)$$

R^2 is 0.1927 and t value is 1.8900.

$$Y_t = 8.4836 + 1.7559\, PCA_{GIT} + u_t \qquad (4)$$
$$(0.3603) \quad\ (0.8668)$$

R^2 is 0.2148 and t value is 2.0300.

Thus, we find a positive but statistically weak correlation between State's governance quality and growth. This is not surprising. The growth rate of a State presumably has many determinants apart from the quality of governance. When we use an OLS model that excludes these other determinants, we should expect that the proportion of explained variation will also be low. Furthermore, if we think of governance as an input in a Solow type aggregate production function for the State, it would follow that the rate of growth of the State's GSDP should also depend on the rate of change of the quality of governance,

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[15] It should be emphasized that the regression equations only test for correlation not causality. However, the underlying rational is that the measured quality of governance around the year 2009-10 is the cumulative outcome of governance performance over the past periods including the reference growth years.

rather than its level. However, this hypothesis has not been tested here.

6. Conclusion

In this paper we have attempted to rate the quality of governance in major Indian States. This is the first exercise of its kind as far as we know, though there have been earlier exercise that have attempted to measure, for instance, the freedom index of States. In our exercise, the concept of good governance has been derived from the three main pillars of government, i.e., the legislature, the judiciary, and the executive. Given the developmental context of this exercise, the latter has been further parsed into the delivery of infrastructure services, delivery of social services, and fiscal performance. Despite variations in concepts or methodology our conception of good governance is broadly consistent with that of a wide range of studies, and can indeed be traced back millennia to the Kautilyan concept of good governance as the *Danda -Dharma* duality.

Performance on each dimension of governance has been measured using indicators that are all based exclusively on factual data not perceptions. These multiple indicators of the

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very complex concept of good governance, have then been aggregated into a comprehensive quality of governance score. Since the aggregation rule or the weighting diagram for aggregation is arbitrary, we have tested the sensitivity of the results to the aggregation procedure by applying three alternative aggregation procedures: Principal Component Analysis, Borda Scores, and the Average of Averages rule. Though the ranking of the States do change between one procedure and another, the results are on the whole pretty robust.

We also find that there is a strong correlation between governance quality and the level of development in a State, as reflected in its per capita GSDP. This is consistent with a well documented pattern of development clusters in the literature, the co-movement of a variety of development and governance indicators, partly because of shared drivers, and partly because of their mutual inter-dependence.

Accordingly, we have also rated States based on a set of transformed indicators, which correct for the effect of development on the quality of governance. In this alternative exercise, it turns out that some of the poorer States significantly improve their rank, implying their governance performance is

significantly better than would be expected for their level of development. By the same token, some of the more developed States lose rank, implying that the good quality of governance in these States is partly attributable to their level of development, the cumulative outcome of a positive legacy inherited from the past.

Finally, we find that there is a positive but statistically weak relationship between the quality of governance in a State and its rate of growth. This is not surprising, because growth is presumably the collective outcome of several factors that are left out in a simple statistical correlation between quality of governance and growth. Also, growth may depend not so much on the quality of governance at a point of time, but the change in that quality over time. However, we have not tested that hypothesis in this exercise.

References

Arrow K. (1974), *The Limits of Organisation*, W.N. Norton & Co., New York.

Asian Development Bank (1997), *Emerging Asia: Changes and Challenges*, Asian Development Bank, Manila.

Baumol, W. (1967), Macroeconomics of Unbalanced Growth: The Anatomy of Urban Crisis, *The American Economic Review*. Vol. 57, No. 3, Jun., 1967

Besley T. & T. Persson (2011), *Pillars of Prosperity*, Princeton University Press, Princeton.

Bird, Richard M. (1971), Wagner's Law of Expanding State Activity, *Public Finance*s, Vol. 26 No.1.

Chang H. (1993), The Political Economy of Industrial Policy, *Camb. J. of Economics* Vol. 17, No. 2, pp131-157

Chang H. (ed.) (2007), *Institutional Change and Economic Development,* United Nations University Press, Tokyo

Charron N. (2010), The Correlates of Corruptions in India's Analysis & Evidence from the State, *Asian Journal of Political Science*, Vol. 18, No. 2, pp. 177-194.

Charron N. (2009) Government Quality and Vertical Power-Sharing in Fractionalized States *Publius* Vol.39, No.4 page: 585-605.

Chattopadhyay R. & E. Dufflo (2004), Women as Policy Makers: Evidence froma Randomized Policy Experiment in India, *Econometrica* Vol. 12. No. 5, pp 1409-1443

D.A.R.P.P. (2009), *State of Governance: A Framework of Assessment*, Department of Administrative Reforms, Public Grievances & Pensions, Govt. of India, New Delhi.

D'Souza E. (2011), *What Constrains Business – The Role of the Single Window*, International Growth Centre, India-Bihar Country Program,

Dixit A. (2004), Lawkessbess & Economics: Alternative Modes of Governance, Oxford University Press, New Delhi.

Freedom House (1996), *World Survey of Economic Freedom*, *1995-1996: A Freedom House Study*, Transaction Publishers, New Brunswick, N.J.

Gallup J.L., J.D. Sachs and Andrew Mellinger (1999) *Geography and Economic Development,* CID Working Paper No. 1, March 1999

Gemmell N. ed. (1993), *The Growth of the Public Sectors, Theories and International Evidence*, Edwar Elgar Policy.

Gill, J. and J. Gainous. 2002 "Why does voting get so complicated? A review of theories for analyzing democratic participation", *Statistical Science*, Vol 17, No. 4, pp 383-404

Greenwood, Lawrence (2004): *Globalization and Economic Governance in East Asia: A New Model for Development*, in Growth Governance & In Asia, ed. by Yoichiro Sato, Asia-Pacific Center for Security Studies, Honolulu, Hawaii

Hobbes T. (1651, 1981), *Leviathon,* First Published in 1651 and Penguin Books, 1981, London

Joliffe, I.T. 2002. "*Principal Component Analysis*", Springer Series in Statistics, Springer.

Kaufman D, A. Kraay, M. Mastruzzi (2007), *Governance Matter VI: Aggretate & In Governance 1996-2006,* World Bank Policy Research Paper 4780, Washington.

Kautilya V. (1992) *The Arthashastra,* English translation by L.N.Rangarajan, Penguin Edition, New Delhi.

Kundu, A. (1984), *Measurement of Urban Processes – A Study in Regionalisation,* Bombay: Popular Prakashan.

La Porta R., F. Lopez- de - Silanes, A. Shleifer, R. Vishny (1999), The Quality of Government, *Journal of Law, Economics, and Organization*, Vol. 15, No. 1.

Lipumba, Nguyuru H. I. 1994. *Africa Beyond Adjustment* Washington, D.C.: Overseas Development Council.

Machiavelli N. (1640, 1961), *The Prince*, Penguin editions 1961

Mauro P. (1995), "Corruption and Growth", *Quarterly Journal of Economics*, Vol. 110, No. 3, pp. 681-712.

Meltzer A. H. and S. F. Richard (1981), "A Rational Theory of Size of Government, *Journal of Political Economy*, Vol. 89, No. 5, Oct., 1981

Nagarajan H.K. and S. Nag (2011), Provision of Public Goods: Do Panchayats Matter?" Paper presented at NCAER Seminar on Mid-year Review of the Indian Economy at India International Centre on January 14, 2011.

Ndulu Benno J. and Stephen A. O'Connell (1999), Governance and Growth in Sub-Saharan Africa *The Journal of Economic Perspectives*, Vol. 13, No. 3 (Summer, 1999), pp. 41-66.

Peacock, A. R. and J. Wiseman (1967) *The Growth of Public Expenditure in the United Kingdom,* Princeton University Press, Princeton.

Rose-Ackerman S. (1978), *Corruption: A Study of Political Economy*, New York, Academic Press.

Rothstein B. and D. Stolle (2008), The State and Social Capital: An Institutional Theory of Generalized Trust, *Comparative Politics,* Volume 40, Number 4, July 2008 , pp. 441-459.

Sarr M. & K. Wick (2010), "Resources, Conflict and Development Choices: Public Good Provision in Resource Rich Economies", *Economics of Governance*, Volume 11, Number 2 page: 183-205.

Shome P. (2012), *Governance: History, Contemporary Debate & Practice*, In S. Kochhar (ed.) Policy Making for Indian Planning: Essay on Contemporary Issues in honour of Montek S. Ahluwalia, Academic Foundation, New Delhi.

Sandler, T. (2001), *Economic Concepts for the Social Sciences*, Cambridge University Press

Sato Yoichiro (2004) *Growth and Governance in Asia: Framework of Analysis* in Growth Governance & In Asia, ed. by Yoichiro Sato, Asia-Pacific Center for Security Studies, Honolulu, Hawaii

Smith A (1776, 1982), *The Wealth of Nations Books I-III*, Penguin Edition, London.

Spengler J. J. (1969). "Kautilya, Plato, Lord Shang: Comparative Political. Economy," Proceedings of the *American Philosophical Society*, Vol. 113, No. 6; pp. 450-7.

Tanzi V. & H.R. Davoodi (2002), *Corruption, Growth and Public Finance* in George T. and Sanjeev Gupta (ed.), Governance, Corruption and Economic Preference, International Monetary Fund, Washington.

Tanzi V. (2001), *Pitfalls on the Road to Fiscal Decentralization* Carnegie Endowment for International Peace, Global Policy Program, Working Paper No. 19, April 2001.

Weber, Max (1958), *The Protestant Ethic and the Spirit of Capitalism*, Charles Scribner's Sons, New York

Weiss T.G. (2000), "Governance, Good Governance and Global Governance: Conceptual and Actual Challenges", *Third World Quarterly*, Vol. 2, No. 5, pp. 795-814.

World Bank (1993) The East asian Miracle Oxford University Press, New York

Appendix 1: Governance Indicators and Their Sources

Dimensions	Items	Variable	Source
Infrastructure Services Delivery	Water	Percentage of households with safe drinking water. Safe drinking water means household have improved source of drinking water such as, piped water into dwelling/yard/plot, public tap/standpipe, tube well or borehole, other improved sources.	State Report, National Family Health Survey 2005-06, International Institute for Population Sciences Deonar, Mumbai
	Sanitation	Percentage of households with improved sanitation means not shared and have flush/pour flush to piped sewer system, septic tank, or pit latrine or pit latrine with slab and other	State Report, National Family Health Survey 2005-06, International Institute for Population Sciences Deonar, Mumbai
	Road	Road length per 100 square kilo meters as on 31st March, 2008.	Basic Road Statistics of India 2004-05, 2005-06, 2006-07 & 2007-08, Government of India, Ministry of Road Transport and Highways, Transport Research Wing, New Delhi, July 2010. Population figures as estimated by o/o Registrar General of India, M/O Home
	Power	Per capita Power Consumption. As per the United Nations methodology, per capita consumption is defined as gross generation/population.	CEA (2009); Planning Commission (2002); Teri Energy Data Directory & Yearbook 2010, Table 6.10, pp. 165-166
Social Services Delivery	Literacy	Literacy rate (%) in 2011	Census of India, 2011
	Enrolment	Gross enrolment ratio (%) in 2007-08, for the children in classes I-XII(6-17 years)	Statistics of School Education 2007-08
	Years of Schooling	Average years of schooling per child aged between 5 to 29 years age in 2007-08.	Calculated from unit level participation and expenditure in education data of National Sample Survey Organisation (NSSO) 64th round, 2007-08
	Infant Mortality Rate	Infant Mortality Rate, 2009	Sample Registration System (SRS) Bulletin 2011, Published and issued by Office of the Registrar General, India.
	Maternal Mortality Ratio	Maternal Mortality Ratio, 2007-09	Sample Registration System (SRS) Bulletin 2011, Published and issued by Office of the Registrar General, India.
	Life Expectancy at Birth	Life Expectancy at Birth 2002-06	Compendium of India's Fertility And Mortality Indicators 1971-2007, Registrar General of India, MoHA, GoI, 2009

Fiscal Performance	Development Expenditure	Development expenditure / Total expenditure (%).	Finance Accounts of different states.
	Own Tax Revenue	Own tax revenue/GSDP (%)	Finance Accounts of Different States and GSDP from Centre for Statistical Organisation (CSO)
Law and Order	Violent Crimes	Rate of Violent Crimes in 2009. Violent crimes means murder, attempt to commit murder, C.H. not amounting to murder, rape, kidnapping & abduction, dacoity, preparation and assembly for dacoity, robbery, riots, arson, dowry death.	Table 3.1, Crime in India, 2009, Statistics; National Crime Records Bureau, Ministry of Home Affairs, Government of India, East Block - 7, R.K. Puram, New Delhi
	Complaints Against Police	No. of complaints registered against police during the year 2009.	Table 16.1, Crime in India, 2009, Statistics; National Crime Records Bureau, Ministry of Home Affairs, Government of India, East Block - 7, R.K. Puram, New Delhi
	Police Strength	Actual police strength per lakh population 2009	Table 17.5, Crime in India, 2009, Statistics; National Crime Records Bureau, Ministry of Home Affairs, Government of India, East Block - 7, R.K. Puram, New Delhi
Judicial Service Delivery	Completion of Trials	Trials completed in 1-3 years as a proportion of total trials in all courts (%)	Table 4.18, Crime in India, 2009, Statistics; National Crime Records Bureau, Ministry of Home Affairs, Government of India, East Block - 7, R.K. Puram, New Delhi
Legislature	MLA's with serious criminal charges pending	Proportion of MLAs with pending serious criminal cases like murder, attempt to murder, kidnapping, robbery, extortion etc. (%)	State wise Report of National Election Watch & Association for Democratic Reforms, B-1/6, Hauz Khas, Delhi
	Women MLA	Proportion of female MLAs out of total number of MLAs. (%)	State wise Report of National Election Watch & Association for Democratic Reforms, B-1/6, Hauz Khas, Delhi
	GSDP per capita		Centre for Statistical Organisation (CSO)

Appendix 2: Governance Ranking

States	Principal Component Analysis		Revised BORDA		Average of the Average of Ranks		GSDP per capita
	Actual Data	Transformed data	Actual Data	Transformed data	Actual Data	Transformed data	
Gujarat	0.49	0.123	33.17	23.33	10.11	8.36	63961
Maharashtra	0.218	0.056	32.67	28.5	9.47	8.42	57458
Andhra Pradesh	0.606	0.429	32.5	28	12.17	10.89	56817
Haryana	0.792	0.494	33.58	27.33	11.14	10.19	55214
Tamil Nadu	0.407	0.425	36.25	34.17	11.11	10.33	46823
Kerala	0.167	-0.259	34.33	33.33	10.56	10.31	46511
West Bengal	-0.627	-0.756	23.92	23.42	7.22	6.58	45346
Chhattisgarh	-0.053	-0.045	24	21.42	8.67	8.11	44826
Punjab	0.911	0.712	34.83	35	11.97	11.78	43539
Karnataka	0.073	0.058	29.17	31.33	10.11	10.11	37464
Rajasthan	0.194	0.334	24.33	22.67	9.14	8.92	34189
Assam	-0.478	-0.427	20.33	23.33	7.97	8.06	30786
Orissa	-0.277	0.021	22.08	24.92	8.06	9.08	24098
Uttar Pradesh	-0.331	-0.12	23.58	25.92	7.89	9.06	23132
Jharkhand	-1.123	-0.815	16.83	19.17	4.08	5.06	22780
Madhya Pradesh	-0.191	0.167	22.5	28.5	7.64	9.56	19736
Bihar	-0.78	-0.398	14.92	28.67	5.69	8.19	11558
Correlation with per capita GSDP	**0.73**	**0.42**	**0.83**	**0.17**	**0.73**	**0.3**	