State of the Art in Governance Indicators

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The Empirical Frontiers of Governance[1]

Governance is a new term in the development dictionary but the underlying concept is as old as human civilization. Effective governance of natural, economic, and human resources has been the hallmark of most successful civilizations. There had always been an institutional basis for the material wealth and the political power of great nations and empires. The concept was not novel for economists either. The writings of some earlier economists, such as Adam Smith, Joseph Shumpeter, and Simon Kuznets, to name but a few, contain plenty of subtle references to some of the central concerns embodied in the present day concept of governance. Though politics seems to be a term arcane to most economists today, the subject of economics was historically treated in the framework of 'Political Economy.' Asian Drama, the famous treatise of Swedish Nobel Prize Winner Gunnar Myrdal is known more for its institutional analysis and less for its economic explanation of poverty. Other contemporary economic thinkers, such as Hirschman, Coase, Olson, North, and Stiglitz, among others, have emphasized the interface between institutions and economic forces. Thanks to these and more recent economists and social scientists, it is generally recognized today that a stable political, institutional, and social framework is an essential precondition for economic growth and development.

I. THE MOTIVATION FOR EMPIRICS
Why is it important to quantify governance?

'…as long as we are unable to put our arguments into figures, the voice of our science, although occasionally it may help to dispel gross errors, will never be heard by practical men. They are, by instinct, econometricians all of them, in their distrust of anything not amenable to exact proof.'
    —*J. A. Shumpeter, 1933)*

Empirics are important to test ideas and hypotheses against real-world evidence and to find plausible answers to some of the most intractable questions. Resolving some of these puzzles holds considerable significance both for our economic understanding and for the sheer impact of these propositions on the welfare of millions of people. A few examples:

1. How do institutions contribute to the evolution of national and world income distribution?
2. Can governance account for differences in cross-country growth rates?
3. Can the poverty of poor countries be devoted to lack of inputs and technology differences only? How important is the role of institutions in keeping nations poor?

Quantification can improve our understanding of a concept that concerns issues of great practical relevance. From the civil wars in Africa to the worsening income distribution in Latin America, from the economic transition in Russian and East European states to the success of economic reform in developing countries, governance affects the way governments design and implement public policies.

An empirical investigation of these key puzzles requires data that is amenable to modern econometric analysis. From the variety of explanations that are offered to

understand these puzzles, careful empirical investigation allows us to select those that are closest to the real-world situation. But *empirics are perhaps more important for inspiring action-oriented reform than for generating and validating ideas*. A couple of hard-hitting statistics can exert more public pressure for reform on policymakers than lengthy commission reports. Consider the comparison: 'if the Philippines could reduce its corruption level to the much lower level of that in Singapore, it would raise its investment-to-GDP ratio by 6.6 percentage points.'[2] No matter how scientifically imprecise such comparisons may be, such indicators prove immensely useful in jolting official slumber.

That statistics can create lobbies for change is exemplified by the Transparency International's success in initiating debates in much of the poor developing world on the evils of corruption. Interesting empirical estimates of growth losses due to corruption draw immediate public attention—bringing home the magnitude of socio-economic loss and the urgency for reform. Diagnostic surveys have also helped identify weak links in the governance chain and focused public opinion on the critical issues of institutional development.

As the following sections show, while the progress in developing governance indicators is significant, a great deal of business remains unfinished. Though the proliferation of governance indicators has increased our understanding of development phenomenally, it has also made us much more aware of our technical limitations. Thus, the proud sense of intellectual discovery should not undermine the need to be more humble about the findings. It is useful to remember that governance is essentially a qualitative phenomenon, the quantification of which would always be subject to considerable empirical limitations. Researchers have so far attempted to use proxy indicators for measuring governance, a concept that purports to capture several complex and multi-faceted dimensions.

It is also critical to avoid a pre-occupation with quantification and a neglect of equally important social, political, and historical processes[3]. There is a need to combine historical, sociological, and political imagination with empirical certainty. In order to form relevant hypotheses and to test innovative causal mechanisms, we need to complement the wealth of empirical information with the broader historical and political information[4]. It is one of those fields where economics cannot simply be abstracted away from historical and political concerns.

II. GOVERNANCE INDICATORS: A MUSHROOMING INDUSTRY

Recent years have seen a remarkable growth in quantitative indicators on governance. In fact, developing such indicators has become a growth industry in itself. Estimates differ but there are roughly over 150 such indicators developed by international organizations, research institutes, and private organizations. The phenomenal growth in governance indicators has partly been fueled by a rising demand for such indicators by researchers and policymakers.

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[2] For details of such comparisons, see for instance, Mauro (1997), Wei (1997), and World Bank (2000).

[3] Gunnar Myrdal, for instance, warns against such a potential bias, whereby interesting arguments are downplayed for lack of quantification. It is worth remembering that Myrdal was one of the earlier economists to emphasize the negative effects of corruption. It took a lag of 27 years to appreciate the consequences of corruption after Mauro's (1995) attempt to empirically estimate the effects of corruption.

[4] Temple (1999) discusses specifically the utility of conducting historical studies.

The use of such indicators in economic and political research became more fashionable after the initial work of Stephen Knack and Philip Keefer, who popularized the using of alternatives measures such as the International Country Risk Guide Indicators (ICRG), developed by credit risk rating agencies [5]. Often, the purpose is to guide foreign investors about economic, political and administrative efficiency in countries of interest. These indicators are developed by credit risk rating agencies to guide foreign investors.

Just as the concept of governance is broad, the indicators purporting to measure it are also varied. There is now a fairly wide range of indicators measuring such diverse concepts as corruption, civil liberties, ethnic conflict, rule of law, effectiveness of judiciary, and bureaucratic delays, to name but a few. There are several other indicators that tend to measure government effectiveness through precise institutional arrangements, such as the size and pay structure of the civil service and various characteristics of political structures.

Measures that attempt to evaluate government performance have been broadly categorized as *process* and *performance* measures[6]. The difference is self-evident: process measures try to capture specific institutional arrangements that are most often associated with better government performance, whereas performance measures are routine assessments of government effectiveness. Thus, the process measures can be seen as providing information on the channels through which a particular institutional feature is *believed* to be associated with better governance outcomes.

The key difference between these two types of indicators is the extent of valuation and beliefs required in the use of such indicators. A greater degree of individual judgment is required to compare countries according to process indicators. The problem arises because many of these beliefs and valuations are not based on decisive evidence. A typical example is the evaluation required in comparing the level of civil service pay across different countries. Low civil service pay is widely believed to characterize a corrupt and inefficient bureaucratic structure, implying that improving the pay structure can reduce bureaucratic corruption. However, so far the evidence linking civil service pay structure to corruption remains inconclusive[7]. Thus, compensation level in the civil service, in and of itself, is a poor descriptor of an institutional arrangement that is conducive to better bureaucratic performance.

There are several other features that differentiate governance indicators, apart from the specific approach employed to measure government performance. Indicators differ with respect to the number of countries they cover, the time period for the availability of statistics, the precise methodology of indicators (e.g. expert surveys, polls etc.), the accuracy with which governance is measured, and the transparency and replicability of indicators. This diversity in the availability of governance indicators doesn't make our life easier. If anything, indicators of so many different kinds and stripes pose a real selection dilemma for the researcher. There seems to be an embarrassment of riches. As it turns out, the very features that distinguish these indicators can prove insightful in deciding which indicators are preferable.

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[5] Knack, Stephen and Philip Keefer. 1995. 'Institutions and economic performance: Cross-country tests using alternative institutional measures.' *Economics and Politics* 7(3): 207-227.

[6] See Knack and Manning (2000) for a detailed discussion.

[7] Rauch and Evans (2000), for instance, do not find a robust association between civil service compensation and various corruption indices.

I will first review the various problems inherent in the use of widely available governance indicators and then proceed to discuss the approaches offered to mitigate some of these data deficiencies.

Country coverage—Coverage across countries varies a great deal between different indicators. Limited country coverage reduces the potential utility of these indicators in studying issues of governance. Indicators with inadequate country coverage can pose substantial difficulties in establishing a meaningful relationship between elements of governance and other variables. Specific econometric issues that deal with such data limitations are presented in box 1 below. Data coverage for countries is a key issue, especially when countries are being ranked. In particular, many of the problems of cross-country ratings and comparisons are accentuated in the face of smaller sample size. For instance, Knack and Manning (2000) offer a useful example on the use of BERI index that covers 50 countries only. Country rankings are relative to the overall sample. Thus, a country with poor rating on BERI index may perform better on some other indicator with more complete country coverage. Thus, limited country coverage can make cross-country ratings susceptible to misinterpretation.

Coverage over time—The availability of indicators with sufficient time coverage is important for better econometric interpretation: for identifying the effect of institutional factors. It is also helpful in gauging country performance over time, both individual and in relation to other countries. Time series data on governance is needed to determine whether institutional dysfunction in developing countries is a transient or a continuing feature. It is crucial to consider the trends, as governance indicators can be significantly influenced by recent events.

Accuracy of indicators—Governance indicators, particularly those that are based on subjective assessments, may not accurately measure the underlying concept. In particular, subjective indicators are usually based on surveys of experts, investors, or the general public, which can not only be shaped by recent political events and measures of economic growth but are also subject to herd effects (Somerville and Taffler). There is a danger that these individual valuations may not accurately reflect the actual governance conditions in a particular country. It is, thus, difficult to disentangle governance dimensions from these recent political and economic developments. More specifically, subjective assessments that are influenced by recent events are not of much help in determining the direction of causality between institutions and economic performance.

The methodology and implementation of many of these indicators is not always clearly articulated and varies from indicator to indicator. Subjective indicators may also be unduly influenced by the ideology of their publishers, whether non-profit organizations or credit-rating agencies. But such measurement issues are not unique to subjective indicators alone. Objective indicators, such as civil service compensation are vulnerable to serious methodological problems. The civil-service wage data does not always account for the non-wage benefits that vary considerably across countries and can make substantial differences in the total compensation package. Moreover, such data is complied from national sources, where definitions of variables and the quality of data vary considerably. Objective measures are also exposed to another problem: the same country may have 'idiosyncratic' scores on different indicators. Many of these measurement issues raise a natural question: Can the data be used for rigorous econometric purposes to establish possible economic links? Box 1

summarizes some crucial econometric issues in this regard. That the statistical analysis is beset with many problems means that the regression evidence should be treated as suggestive, not conclusive. It also requires that conclusions be humbly drawn. These technical limitations should facilitate a more sobering agenda, not treated as a disaster. As the next section shows, several econometric techniques can be allowed to mitigate such data limitations.

Difficulty of cross-country comparisons—Data and measurement discrepancies in governance indicators make precise country comparisons dubious. Thus, comparing country scores can be a controversial exercise. In an important paper, Kaufmann *et al* (1999a) offer an alternative approach of devising 'broad categorical groupings' that identify country vulnerability on a given indicator. They have shown that the margin of error for individual countries on many of these subjective indicators can vary a great deal, implying the futility of venturing on precise comparisons.

Box 1: Governance indicators: some econometric issues

The use of governance indicators in statistical regressions raises a number of econometric issues. The following are particularly important:

Endogeneity. Governance indicators are far from being exogenous. First, they are likely to be measured with error. Second, they might be subjected to reverse causation. An example. Institutions are both a cause and consequence of better economic performance. Institutional weakness could be an outcome of policy reversals, economic downturns, or civil conflicts, for instance. Third, endogeneity could be an outcome of spurious correlation. Governance indicators could capture the effect of some missing variables, causing the familiar omitted variable bias.

Sample Selection Bias. The different sample coverage of governance indicators restricts researchers to smaller—and hence, not necessarily representative—samples. The results could thus not be generalized.

Model Uncertainty. This is a problem specific to linear regression models, where there is considerable uncertainty as to the choice of appropriate regressors. It is as much relevant to regressions that include governance indicators.

Influential Observations. As is common in regression models, the results could be driven by a handful of influential statistics or outliers. Much of the regression evidence on governance is susceptible to this problem, yet few papers tend to directly address this.

Non-Linearities. In a concept as multi-dimensional and complex as governance, a non-linear relationship might not be unexpected. Recent papers have shown greater sensitivity to this issue by including interaction and quadratic terms. A key example in this regard is the use of a squared term of the democracy variable in Barro's regressions, which is used to demonstrate how the benefits of democracy are reaped in countries beyond a certain threshold of income.

Correlation versus Causation. It is difficult to infer causation from cross-sectional regressions. In most cases, at best only some degree of correlation could be identified. While the panel regressions could be more informative here, governance indicators are found to be relatively less significant in panel investigations.

III. WHERE TO GO FROM HERE?

As the preceding section shows, the proliferation of data on governance and its easy accessibility is not a perfect consolation for researchers in the field. The use of such data is accompanied by myriad technical issues. But, the question remains: How can one avoid falling these popular traps in the use of governance data, particularly subjective indicators? There are no straight answers, no

easy solutions. Knack and Manning (2000) offer a critical test that requires indicators to fulfill some stringent conditions. These conditions can be used to judge the suitability of a particular indicator. (See box 2).

In practice, very few indicators would fulfill all the conditions outlined in box 2. As a whole, objective indicators stand a better chance of meeting these criteria, since they are more likely to implicate specific institutional arrangements and are easily replicable. Though most objective indicators may have a narrower dimension, but the institutions are more identifiable. At present, very few such objective indicators are available. Knack and Manning (2000) offer some potential candidates: contract-intensive money, civil-service pay relative to the private sector pay, waiting time for telephone lines, policy volatility, and some other descriptive measures of political structures.

Box 2: Critical dimensions of governance indicators

There can be at least five different ways to judge the efficacy of governance indicators:

Relation with particular institutions: This concerns the manner in which indicators implicate particular institutions. These indicators can help identify the institutional channel through which government performance is affected.

Relation with outcomes: This refers to the degree of specificity with which indicators relate to the outcomes of good governance (such as poverty reduction).

Replicability and transparency: This relates to the ease with which indicators can be replicated and their methodology and implementation accessed.

Quality and accuracy of indicators: This corresponds to indicators that measure more accurately the underlying concept and use high quality data.

Data coverage: this relates to coverage of the indicators over time and across countries.

Source: Knack and Manning (2000).

Objective indicators have their own troubles, however. They are susceptible to measurement problems as well and can also require a certain degree of judgment. For instance, it is not certain if a particular institutional arrangement will lead to a specific outcome in every country. Obviously, it would be foolish to expect scientific regularity here. Governance is a result of a complex interplay of social, ethnic, political, and economic processes. One size can't fit all, since there are a variety of experiences. What is more, objective indicators often provide limited information on how well institutions perform.

There are ultimately some trade-offs involved in the choice between objective and subjective indicators. Such choice may depend partly on the purpose for which indicators are to be used. If the end-purpose is to test the broad contribution of governance to a country's development, subjective indicators can be fruitfully used. If on the other hand policy insights on specific institutions are to be obtained, subjective indicators may not be of much help here.

In the end, the choice may depend on simple concerns like the easy availability of time-series data on governance. However fancy the idea may be, objective indicators are few and far between and do not generally cover the more interesting dimensions, such as civil liberties, trust, etc. Subjective data is often the only source of evidence for economists working in this area. It is difficult to doubt the need for developing better objective indicators and this poses a momentous task for national governments and international organizations. In the interim, there are certainly ways to meaningfully use the subjective indicators.

At least five broad lessons can be distilled from the available literature. *First*, subjective indicators based on a assessments of a larger number of respondents, whether experts, investors, or citizens, should generally be preferred. *Second*, many empirical studies tend to prefer indicators produced by private agencies, since they are subscribed by investors. It is believed that in such cases there are greater incentives for accuracy as the indicators 'face a market test.' *Third*, an indicator that is more strongly correlated with other governance indicators is likely to be more accurate than an indicator measuring a similar dimension but only weakly correlated with other governance indicators. *Fourth*, indicators that meet a research test better ought to be preferred. There is a case for preferring indicators that have found a wider use in empirical studies. *Fifth*, indicators with a greater range of countries and time are considered more appropriate than those with limited time and country range. *Sixth*, subjective indicators can also be aggregated to yield more precise estimates of governance. This is the subject of the next section, to which I turn now.

IV. AGGREGATING GOVERNANCE INDICATORS

'The manner in which, when a sufficient number of instances are taken, aggregate regularity is found to emerge out of individual irregularity has been one of the most striking results of statistical research.'—(*Keynes, 1891*).

Aggregation of indicators allows distilling information from a vast array of governance data and does away with many of the limitations involved in using subjective indicators. The resulting composite indicators summarize the available evidence much better than the individual indicators. Composite indicators are frequently viewed as being more accurate, reliable and more useful for cross-country research than individual indicators. Allowing for data for more countries, aggregate indicators greatly facilitate the cross-country comparisons. There are some downsides to aggregation as well. While composite indicators provide a general indictment of a country's institutional performance, they may not be very appropriate for identifying appropriate institutional reforms. With aggregate indicators, it is difficult to identify the channels through which the institutional effect operates.

Though several techniques could be used to aggregate governance indicators, I will briefly consider three major techniques.

Unobserved Components Model

Using data from 170 countries over the period 1997-98, Kaufmann and associates (1999) carry out an aggregation exercise using an unobserved components model. They use a larger set of indices to form six component indices: voice and accountability, political stability, government effectiveness, regulatory burden, rule of law, and control of corruption. Their major finding is that 'aggregate' governance indicators are imprecise: the margins for error for individual countries and the confidence intervals are large. This is despite the high correlation observed among most governance indicators. Such high degree of imprecision of governance indicators means that it is difficult to rank countries on levels of governance. One could arrive at broad groupings (high, medium, and low), at best.

Latent Variable Method

Temple (1999) suggests an alternative route: 'one promising way forward is to combine indicators using latent variable methods, and then examine the robustness of these overall measures'. The social and political influences on growth can be modeled as latent variables related to a variety of observable factors.

Principal Components Analysis

The high degree of correlation among various governance indicators is well known. Principal Components Analysis is a simple method to identify the amount of variation attributable to a particular indicator. Different component indices are aggregated with unknown weights. The principal components technique has largely been ignored in the literature but it offers a great deal of potential for summarizing information from indicators from a variety of sources.

V. The definitional context

What is it that we are trying to measure? Governance is a multi-dimensional concept. It is broad enough to allow for interpretational differences. The notions of governance are varied and could thus have important measurement implications. Recent years have seen an evolving consensus on the major constituents of good governance. But owing to ideological differences of the proponents of these different concepts of governance, a varying degree of emphasis is attached to various dimensions of governance. This is related, in part, to differences relating to the ends of better governance and the means to achieving these ends.

The debate on governance indicators has so far been pre-occupied by concerns of growth and investment. A relatively small number of studies have attempted to associate governance indicators with human development outcomes. The concern for human development largely remains an after thought, however. Although there have been attempts to roughly correlate governance indicators with indicators of human development, very few studies have actually attempted to explore the various channels through which governance impacts on development outcomes. Subjective indices demonstrate a causal link with development outcomes but the knowledge of underlying mechanisms remains weak. For instance, indicators such as rule of law, corruption, and political instability are correlated with health, nutritional and educational outcomes but there is little insight on how such outcomes are generated.

It is very likely that such correlation between governance indicators and development outcomes operates through higher per capita incomes. Strong institutions improve economic performance, which in turn favorably impacts on development indicators. But there is a need to go beyond such indirect evidence.

Another difference between governance definitions emanates from the major realms of activity covered. Many definitions in vogue are short of being comprehensive and multi-dimensional. There is a need for wider domains, where the major agents, such as the private sector, the civil society, and the political systems are all included. Several efforts have been made to enlarge the governance agenda. In a preliminary attempt, *HDSA 1999* combines the economic, political, and civic dimensions of governance in one single indicator, the Humane Governance Index (HGI). Indicators under each dimension are provided in table 1 below.

Kaufmann *et al* (1999) combine 31 different indicators into different clusters, such as the rule of law, government effectiveness, voice and accountability, to name a few. The *Voice and Accountability* cluster includes a number of indicators measuring different aspects of the political process, civil liberties, and political rights. Variables measuring independence of the media are also included in this cluster. *Government Effectiveness* combines dimensions such as the quality of public services and the bureaucracy, the competence of civil servants, the degree to which public servants are insulated from political pressures, and the credibility of government's commitment to policies. Similarly, the *Rule of Law* combines several indicators on the existence and effectiveness of regulations.

Table 1: **Indicators for Human Governance Index, 1999**

Dimension	Indicator
Economic Governance	• Inflation • Overall budget deficit (% of GDP) • Current account deficit (% of GDP) • Public health expenditure (% of GDP) • Public education expenditure (% of GDP) • Ratio of official to parallel exchange rate
Political Governance	• Corruption • Bureaucratic quality • Democratic accountability • Ethnic tension • Government stability • Law and order • Socio-economic conditions
Civic Governance	• Freedom of expression • Non-discrimination • Political participation • Rule of law

The availability of a vast array of governance indicators has brought a number of useful common sense relationships into the realm of statistical credibility. Governance was until recently a peripheral concern and has been effectively brought to the center of the development debates. But there is a huge unfinished agenda: much less is known on the critical linkages and there is too much generalization. In particular, much less is known on how better governance leads to improved human development outcomes. Our current knowledge has not gone much farther than simple associations and correlation. All we know is that countries with better governance also happen to be those with better social indicators. Also, even where such mechanisms are known, their relevance in different regions is hardly appreciated. The relationship between governance and development could be generated by mechanisms that vary in different regions. Imaginative evidence is beginning to emerge. For instance, as one study shows (see below) the effect of corruption on inequality is much more pronounced in Latin America than in other continents.

The following describes selected examples where key governance concerns were linked with human development.

Corruption

Not much could be asserted beyond some simple well known truths. Corruption leads to lower economic growth. Many channels are at work here: misallocation of talent, reduced investment levels, growth of unofficial economy, distorted investment priorities, and state capture by the corporate elite, among others. Corruption imposes a distortionary tax, it distorts investment priorities, and causes a severe misallocation of talents. Besides hampering growth, corruption has also been shown to increase income inequality and poverty (Gupta *et al*, 1998). Several channels have been described for this purpose, such as regressive taxes, poor targeting of social programmes, unequal access to education, reduced social spending, and higher investment risks for the poor (World Bank, 2000). In a recent study, Kaufmann *et al* (1999b) show that corruption is associated with an increase in infant mortality and a reduction in life expectancy and literacy. Similarly, the UNDP's Human Poverty Index (HPI) is negatively related to indices of governance and corruption, even after controlling for GDP per capita. As described earlier, the exact mechanisms are less well-known and there is a great room for further imaginative work here.

Li *et al* (2000) examine the effects of corruption on income inequality, as measured by the Gini coefficient. A one standard-deviation increase in corruption raises the Gini by roughly five points. Countries with greater inequality in asset (mainly land) ownership experience a more devastating effect of corruption on growth.

Several interesting implications follow from this:
- Corruption and income inequality are related in an U-shaped way: countries with an intermediate level of corruption experience a more unequal income distribution than countries with too little or too much corruption.
- The links between corruption and inequality are best understood from a theoretical framework borrowed from Murphy et al (1991). The setting is simple, with a two-fold

division of the economy into a traditional and modern productive sectors. Owing to to its reliance on permits, quotas, and licenses, the modern sector is more prone to corruption.

- The effect of corruption on inequality hinges on a number of other factors. For one, government spending provides a critical link. Higher government spending financed by higher taxes on the modern sector reduces the income differential between the modern and the traditional sector. Thus, the inequality-raising effects of corruption are likely to be smaller in countries with more government spending. Similarly, the inequality-raising effects of corruption are smaller where the initial asset distribution is more skewed. The reason: a more unequal distribution of assets reduces the poor's access to credit markets, preventing migration to the modern high-wage sector.

- The growth-reducing effect of corruption is stronger, when government spending is higher and land distribution is more unequal.

It is difficult to establish causality from corruption to development, even though it appears to be associated with adverse human development outcomes. A higher incidence of corruption is often associated with lower school attainment, higher population growth, low levels of financial depth, and higher levels of poverty. Some linkages have been espoused, but these are often not more than speculation.

Ethnic Conflict

The adverse effect of ethnic conflict on growth has been documented by a spate of recent research (most notably by Easterly and Levine, 1997). Ethnic conflict is a recurrent feature in societies fractionalized on ethnic lines. Using the Ethnic Fractionalization Index, recent studies espouse a negative relationship between ethnic diversity and economic growth. The role of ethnic divisions in retarding growth has been particularly noticeable in the case of Africa (Easterly and Levine, 1997). The links between ethnic fractionalization and economic growth are myriad—both direct and indirect. Ethnic splits could reduce the ability of poor groups in financing human capital accumulation, hampering the productive potential of society. Ethnically polarized societies are also susceptible to a higher degree of social conflict. Such social polarization emanating from ethnic tensions could also lead to wide policy shifts (Knack and Keefer, 2000). Similarly, ethnic divisions could mean lower social capital, which is now recognized as an ingredient for promoting growth.

The broader development consequences of ethnic polarization are also well established. Ethnically diverse cities spend less on public goods provision, as recently shown for US cities and counties by Alesian, Baqir, and Easterly (1999). Ethnic diversity has been shown to be associated with poor quality of public services, political instability, and lower schooling.

How do institutions impact on these links between ethnicity, growth, and development? It turns out that many of the negative consequences of ethnic diversity are exacerbated in the presence of weak institutions. Thus, ethnic divisions are socially and economically more harmful, where institutions are weak. In the light of this evidence, good governance assumes even more significance in ethnically divisive societies. Some would go as far as saying that strong institutions provide a way of resolving ethnic conflicts (Easterly, 2000).

Political-Institutional Variables

Several variables measuring socio-political instability have become popular in recent years, such as political assassinations, riots, revolutions, coups, demonstrations, etc. the results are mixed, with varying levels of significance in growth regressions. Such variables have often been combined in a single aggregate statistic or index through such techniques as principal components and factor reduction. The general result that emerges from a vast array of such studies is that socio-political instability is harmful for growth and investment.

Some of the most interesting evidence using political variables relates to the link between democracy and growth. In a recent paper, Rodrik (2000) summarizes it as:

- Democracy promotes long-term economic growth
- Democracy helps achieve short-term stability
- Democracy assists in managing the adverse shocks better
- Democracy delivers better distributional outcomes

The evidence is suggestive, though far from conclusive. Hard evidence on the direct channels between democracy and growth are difficult to get by, though democracy is believed to influence growth through a variety of indirect channels, such as the accumulation of human capital. Whether democracy promotes or hinders economic growth depends in part on the level of income. In his analysis, famous macroeconomist, Robert Barro has convincingly shown the difficulty of maintaining strong democratic institutions below a certain level of income.

It is also not very clear whether it is democracy that fosters growth or is it growth that facilitates democratization. It turns out that democracy is both a cause and a consequence of economic growth. Unfortunately, much of the regression evidence on democracy and growth is plagued by the likelihood of such simultaneity. The upshot is that the results are rendered less reliable, even though democracy is often instrumented with other variables in formal econometric regressions.

There is yet another problem. In linking democracy with growth, the existing research adopts a uni-focal perspective. This happens in two ways. *First*, the conventional indicators for democracy often encapsulate a more restricted notion of political participation. *Second,* the single-minded focus on the link between democracy and growth could be restrictive. Greater political participation is probably an end in itself, not just a means to higher growth. Let me turn to these separately.

Much of the evidence on the link between democracy and growth comes from regression analysis using a democracy measure derived from the Freedom House's civil and political rights indices. These indices are, at best, a weak characterization of the notion of democracy, which goes beyond formal electoral procedures. There is more to political participation than just a ballot box. In many developing societies formal political arrangements—such as the eligibility to vote, political parties, parliaments, etc—coexist with informal levers to control state power. Thus, self-serving elites could often manipulate formal procedures to their

advantage. It is no surprise, then, that in many countries elections could easily turn into a dull ritual—often recycling the powerful elite[8].

What does this add up to? There is a need, I believe, to move beyond narrow measures of democracy—measures that are often too focused on voting rights and the existence of multi-party political competition. Luckily, political indicators have seen a phenomenal growth in recent years. This has not merely been an exercise in increasing quantity. Many of these indicators offer substantial qualitative improvement in terms of techniques and concepts.

This growing political data offers several advantages. *First*, unlike previous indicators, it offers strong theoretical connections. They are mostly derived from positive political science theory.

Second, far from being loosely defined, the institutional arrangements are more narrowly implicated. Two examples. The 'Political Constraints Index' measures the strength of a political system from a particular angle—that of the degree of constraints on executive discretion. It focuses on two structural elements of political systems: the number of independent government branches with a veto power and the distribution of preferences across and within these branches. Similarly, the 'Competitiveness of Political Participation' from the well-acclaimed POLITY III database specifically measures the 'extent to which non-elites are able to access institutional structures for political expression.' It investigates whether political participation is (a) competitive (b) transitional (c) fractional (d) restricted or (e) suppressed.

Third, some of these newly developed indicators tend to provide an objective assessment of political institutions. The Database of Political Institutions (DPI) developed by the World Bank, for instance, introduces a number of such objective indicators that purport to measure specific institutional arrangements. Some of these variables tend to capture novel dimensions, such as the tenure and stability of governments, the existence of institutional checks and balances, fragmentation of opposition and government parties in the legislatures, to name a few. As discussed earlier, being more precise and free from perception biases, objective indicators are often viewed to be preferable over subjective indicators.

Democracy has economic payoffs that are broader than just achieving economic growth. As latest research shows, countries with participatory political systems are more amenable to experiencing economic stability. Rodrik (2000) considers the relationship between democracy and economic volatility by regressing the standard deviation of real per capita GDP growth on democracy and selected control variables during the period 1960-89. The coefficient on the democracy variable turns out to be negative. Such a negative relationship between macro-economic volatility and democracy is evident from figure 1. It displays a partial scatter plot between volatility and political institutions—a principal components measure of three indices: democracy, competitiveness of political participation, and the political constraints index.

Democracy is associated with broad development gains. It is a human right and an essential ingredient to achieving better human development outcomes. Development is freedom, as Amartya Sen proclaims. Human catastrophes, like famines, are an exception under democracies. In short, participatory political systems are an excellent means to enlarging human choices. This is more or less a part of conventional development wisdom

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[8] In many Latin American and African countries, entrenched elites like military attempt to turn the democratic system to their advantage.

now. Yet, we are still far away from producing enough supportive evidence to this effect. Some is available, yet a lot more evidence needs to be discovered, with clearly defined linkages. Evidence from the 1,500 World Bank-financed projects suggests that civil liberties—an important component of the democracy variable—and citizen participation were found as important factors for project success.

FIGURE 1: VOLATILITY AND POLITICAL INSTITUTIONS
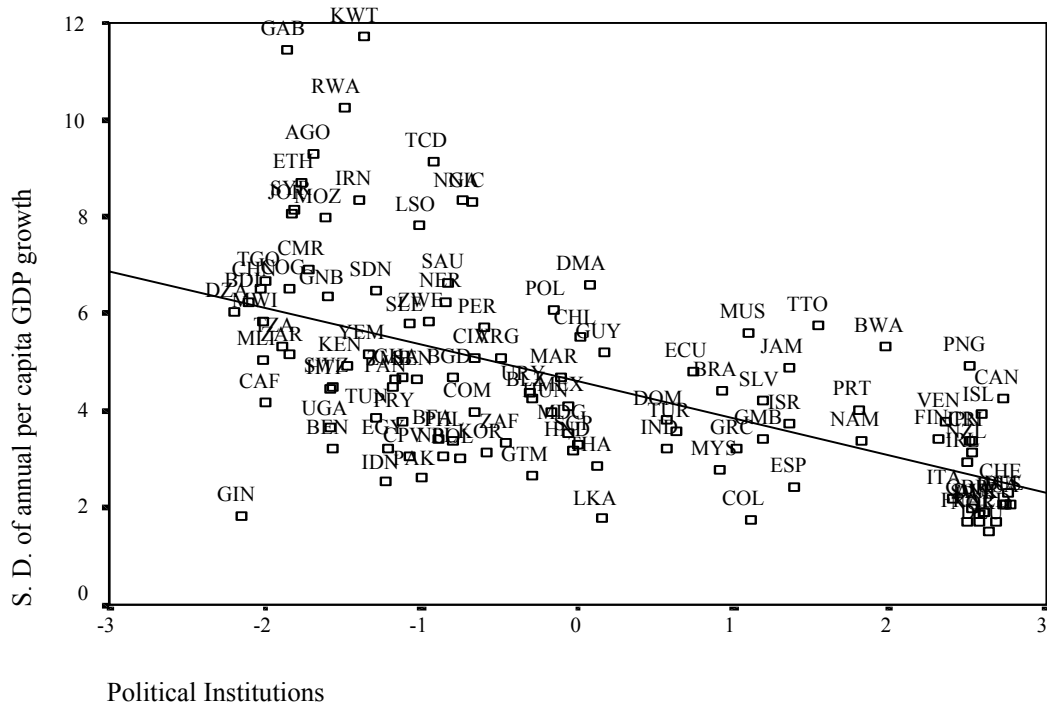
Social Capital

There are only a few measures of social capital available. In an interesting attempt, Knack and Keefer (1997) use measures of trust and civic norm from the World Values Survey by Inglehart (1994). They demonstrate that by strengthening informal institutions, social capital could have both a direct and an indirect effect on growth. More important, income equality and low ethnic divisions are also related to trust and civic cooperation. Trust and education are also positively correlated, though such a result is likely to suffer from endogeneity. The link could be either way: from Trust to education and vice-versa. The empirical link between social capital and development outcomes is relatively less understood at the moment.

VI. Concluding remarks

TO BE ADDED

A number of lessons learned…..

More indicators for the same governance dimension preferred over a single indicator…..

Need to avoid precise country rankings. Broad groupings….may be……

Several relatively under-addressed areas….using indicators to implicate particular institutions for reform purposes….widening the definition….identifying critical links between governance and development….greater focus on power structures that abort social development….the misgovernance imposed by ongoing developments, such as globalization and adjustment programmes…

Case studies approaches are welcome….need to complement available data with survey data …….need to combine statistical evidence with historical case studies……

Important to consider indicators over time rather than just a point in time…to allow for comparisions……..

Correlation should not be confused with causality….

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Knack, S. and P. Keefer. 2000. 'Polarization, politics, and property rights: links between inequality and growth.' *Policy Research Working Paper 2418*. Washington, D. C.: The World Bank.

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Ideas for figures/tables/graphs

1. plot country growth rates against some composite indicator of governance.
2. simple correlation matrix for a range of institutional variables and HDI average
3. plot a composite governance indicator against income inequality.
4. plot corruption perception index against Human Poverty Index.
5. Income distribution and growth
6. unbundling governance: the world bank
7. kinds of indicators used in different studies

Selected governance indicators

Indicator source	Underlying governance concept	Methodology	Country coverage	Period covered
Political Risk Services/ International Country Risk Guide (ICRG) (www.prsgroup.com)	Corruption in government; Law and order; and bureaucratic quality	Experts	130	1982-
Business Environmental Risk Intelligence (BERI)	Bureaucratic delays; Contract enforceability; Nationalization risk; Policy stability	Experts	50 (mostly developed)	Early 1970s
Heritage Foundation (www.heritage.org)	Property rights; Black market; Regulation	Experts	161	1995-
Global Competitiveness Report	Civil service independence from politics; competence of public sector personnel; tax evasion; effectiveness of police force	Business survey		
World Development Report 1997 (www.worldbank.org/html/edi/ gac/pubs.htm)	Policy unpredictability; quality of government services; corruption and red tape; and judicial unpredictability	Business survey	69	1997
Transparency International (TI)	Corruption perceptions index	Aggregation	99	1995-
World Competitiveness Yearbook	Bribing and corruption; tax evasion; public service exposed to political interference; personal security and private property	Business survey		
Kaufmann, Kray and Zoido-Lobaton (1999)	Graft; Rule of Law; Voice and Accountability; Political instability and violence; government effectiveness; regulatory burden	Business survey	160	1998-99
Freedom House (www.freedomhouse.org)	Political freedoms; Civil liberties	Experts	172	1972-
Contract-intensive Money Clague et al (1999)	Contract enforcement and property rights	Objective measure		
Civil service employment and pay (Schiavo-Campo et al 1997 and forthcoming)	Variables on public sector pay and employment	Objective measure	80 to 100	1997 and 2000
Weberian comparative state data project	Various dimensions of bureaucratic structure and meritocracy	Qualitative responses from 126 country experts	35	1993-96
Polity 98 project	Descriptive measures of political structures and regime change	Objective measure; compilation	……..	1800-1986

Database of Political institutions (DPI) by Beck et al (2000)	113 variables on political institutions	Objective measures	177	1970-95
Political Constraint Index By Henisz (2000)	Number of independent branches of government with veto power and the distribution of preferences across and within these branches	………….	140	1960-
Policy volatility (World Bank)	An objective measure of policy coherence and predictability obtained from public expenditure data	Objective; calculated from expen-diture data	90	……….
International Telecommunication Union (ITU)	Waiting time for telephone lines	Objective measure	150 developing countries	1997-
Standard and Poor's DRI (Country Risk Review)	Indicators for government effectiveness, rule of law and corruption	Poll	106	1996-
Institute for Management Development/World Competitiveness Yearbook (www.imd.ch)	Several governance indicators	Objective data and perception surveys	47 (mostly developed)	1987-
Gallup International (www.gallup-international.com/survey1.html)	Frequency of cases of corruption among public officials	Citizen surveys	44	1997

Institutions and economic performance: an annotated bibliography

Authors/Source	Methodology	Summary of findings
Ades, Alberto and Rafael di Tella. 1996. 'The causes and consequences of corruption: A review of recent empirical contributions.' *IDS Bulletin* 27(2).	Review of empirical contributions of causes and effects of corruption	Corruption negatively affects investment, and corruption is associated with the lack of competition in the product market and with less independent judicial systems.
Ades, Alberto and Rafael Di Tella. 1999. 'Rents, competition, and corruption.' *American Economic Review* 89: 982-993.	Explore the hypothesis that level of rents and market structure determine corruption— by constructing a simple model of corruption inspired by compensation theory. Present suggestive evidence on the general structure of corruption regressions and empirically study the causes of corruption.	Countries where firms enjoy higher rents tend to have higher corruption levels. Corruption is higher in countries where domestic firms are sheltered from foreign competition, with economies dominated by a few number of firms, or where antitrust regulations are not effective in preventing anticompetitive practices.
Alesina, Alberto et. al. 1996. 'Political instability and economic growth.' *Journal of Economic Growth* 1(June)	Investigate a relationship between political instability and per capita GDP growth in a sample of 113 countries for the period 1950-1982. Political instability is defined as the propensity of a government collapse. Estimate a model where political instability and economic growth are jointly determined.	In countries and time periods with a high propensity of a government collapse, growth is significantly lower than otherwise.
Alesina, Alberto and Roberto Perotti. 1996. 'Income distribution, political instability, and Investment.' *European Economic Review* 40: 1203-28.		
Alesina, Alberto. 1998. 'The political economy of high and low growth.' *Annual World Bank Conference on Development Economics 1997*. Washington, D.C.: The World Bank.	Institutional quality is measured by bureaucratic efficiency, absence of corruption, protection of property rights, and the rule of law. Ordinary least squares, seemingly un-related regressions, and three-stage least squares procedures are employed to demonstrate the link between institutions and growth.	Institutional quality, political stability, and civil and economic liberties are important for growth. Government consumption is particularly harmful in countries with weak institutions, where it does not seem to improve social indicators or reduce poverty or income inequality.
Banerjee, Ahijit. 1997. 'A theory of misgovernance.' *Quarterly Journal of Economics* 112: 1289-1332.	Develops a three-agent model consisting of the government, bureaucrats, and the people outside.	Red tape, corruption, and lack of incentives in government bureaucracies can be explained by two factors: the fact that governments often act precisely in situations where markets fail and the presence of agency problems within the government. These problems are exacerbated at low levels of development

		and in bureaucracies dealing with poor people.
Beck, Thorsten et al. 2000. 'New tools and tests in comparative political economy: The database of political institutions.' *World Bank Policy Research Working Paper 2283*. Washington, D.C.	Introduction of a large new cross-country database on political institutions. Summary and comparison of key variables, which include measures of tenure, stability and checks and balances; identification of parties with the government coalition or the opposition; and fragmentation of opposition and government parties in legislatures.	Doesn't find the result robust enough that democracy is more likely to survive under parliamentary governments than presidential systems. Raises further puzzle for future research.
Broadman, Harry G. and Francesca Recanatini. 2000. 'Seeds of corruption: Do market institutions matter?' *World Bank Policy Research Working Paper 2368*. Washington, D.C.	Presents an analytical framework to examine role of market institutions in rent seeking.	Provides preliminary evidence on the link between the development of market institutions and incentives for corruption.
Brunnetti, Aymo, Gregory Kisunko, and Beatrice Weder. 1997. ' Institutional obstacles of doing business: Region-by-region results from a worldwide survey of the private sector. *World Bank Policy Research Working Paper 1759*. Washington, D.C.: The World Bank.	Survey of business establishments around the world to construct an index of the 'credibility of rules', composed of 'the predictability of rule making, subjective perceptions of political instability, security of persons and property, predictability of judicial enforcement, and corruption.' Cross-firm and cross-country regressions are used to test the relationship between the credibility index and economic growth.	Credibility promotes investment and economic growth
Burnside, Craig and David Dollar. 1998. 'Aid, policies, and growth.' *World Bank Policy Research Working Paper 1777*. Washington, D.C.: The World Bank.	Panel regressions measuring the relationships between aid, policies, and growth for 56 countries over six four-year time periods.	Aid has a positive impact on growth in developing countries with good fiscal, monetary, and trade policies. Aid does not appear to affect policies systematically either positively or negatively.
Burnside, Craig and David Dollar. 1998. 'Aid, the incentive regime, and poverty reduction.' *World Bank Policy Research Working Paper 1937*. Washington, D.C.: The World Bank.	Panel regressions explaining the impact of aid on growth in developing countries. Indicators include both macro and micro dimensions: decline in infant mortality, initial conditions, growth of per capita income, government consumption, aid/GNP.	Aid spurs growth and poverty reduction only in a good policy environment. In developing countries with weak economic management, there is no relationship between aid and change in infant mortality in cases which a recipient has a relatively good management.
Campos, Nauro F. 2000. 'Context is everything: Measuring institutional change in transition economies.' *World Bank Policy Research Working*	Presents measures to map institution building. Collects data and constructs indicators for five institutional dimensions: accountability of the executive,	In its effects on per capita income and school enrollment, rule of law turns out to be the most important institutional dimension. In terms of life expectancy, however, bureaucratic quality plays the

Paper 2269. Washington, D.C.	quality of the bureaucracy, rule of law, character of policymaking process, and strength of civil society.	most crucial role. Moreover, institutions are not immutable: they do change over time.
Chong, Alberto and Cesar Calderon. 1997. ' Empirical tests on the causality and feedback between institutional measures and economic growth.' Mimeograph. The World Bank, Washington, D.C.	Geweke decomposition is used to test the causality and feedback between institutional measures (such as contract enforceability, nationalization potential, infrastructure quality, bureaucratic delays, and a composite index of the above four) and economic growth.	Improving institutional development promotes economic growth in developing countries.
Chong, Alberto and Cesar Calderon. 1997. ' Institutional change and poverty, or why is it worth it to reform the state?' Mimeograph. The World Bank, Washington, D.C.	Cross-country regressions using measures of risk of expropriation, risk of contract repudiation, law and order, corruption in government and quality of bureaucracy for institutional development, and measures proposed by Foster-Greer-Thorbecke for poverty	Improvements in institutional efficiency reduce the degree, severity, and incidence of poverty.
Chong, Alberto and Cesar Calderon. 1998. ' Institutional efficiency and income inequality: Cross-country empirical evidence.' Mimeograph. The World Bank, Washington, D.C.	Cross-country regressions using a composite index of institutional efficiency based on measures of corruption of government, quality of bureaucracy, law and order tradition, risk of expropriation and risk of contract repudiation.	For poor countries, institutional efficiency is positively linked with income inequality, and for rich countries it is negatively linked with income inequality.
Collier, Paul and Anke Hoeffler. 2000. 'Greed and grievance in civil war.' *World Bank Policy Research Working Paper 2355*. Washington, D.C.	Set up a simple rational choice model of greed-rebellion and contrast its predictions with those of a simple grievance model. Logit regression is used to predict the risk that a civil war will start during a five-year sub-period.	Opportunities for predation (controlling for primary commodity exports) cause conflict and the grievances this generates induce diasporas to finance further conflict.
Cukierman, Alex, Steven Webb, and Bilin Neyapti. 1994. 'Measuring central bank independence and its effect on policy outcomes.' *International Center for Economic Growth Occasional Paper* 58:1-62	Cross-country regressions used to develop four different rankings of central bank independence: legal, governor's turnover rates, responses of specialists to questionnaire on central bank independence, and an aggregation of the first two.	Legal independence is a statistically significant determinant of price stability among industrial countries, but not developing countries. The rate of governors' turnover contributes significantly to explaining inflation in developing countries and in explaining variations in inflation across the overall sample of countries. An inflation-based index of overall central bank independence, combining legal and turnover information, helps explain cross-country variations in the inflation rate.
Cull, Robert. 1998. 'How deposit insurance affects	Cross-country regressions in levels and differences	Explicit deposit insurance is positively correlated with subsequent increases in

financial depth.' *World Bank Policy Research Working Paper 1875*. Washington, D.C.: The World Bank.		financial depth if adopted when government credibility and institutional development are high.
Dailami, Mansoor. 2000. 'Financial openness, democracy, and redistributive policy.' *World Bank Policy Research Working Paper 2372*. Washington, D.C.	Brief review of the evolution of the international financial system. Develops an analytical framework for a welfare cost-benefit analysis of financial openness to international capital flows. The economic investigation involves the use of logit analysis.	Suggests a positive and stistically significant correlation between democracy, open capital flows, and redistributive social policies. Moreover, redistributive social policies are key in determining the likelihood that countries can successfully combine an openness to international capital mobility with democratic forms of government.
Demirguc-Kunt, Asli and Enrica Detragiache. 1998. 'Financial liberalization and financial fragility.' Development Research Group. The World Bank, Washington, D.C.	Panel logit regressions using rule of law, corruption, and contract enforcement as measures for institutional development as determinants of the probability of financial crisis after interest-rate liberalizations.	Banking crises are more likely to occur after financial liberalization. However, the effect of financial liberalization on the fragility of the banking sector is weaker when the institutions are more developed.
Djankov, Simeon, Rafael La Porta, Florencio L. Silanes, and Andrei Shleifer. 2000. 'The regulation of entry.' *NBER Working Paper 7892*. Massachusetts.	Provide new data on the regulation of entry of start-up firms in 75 countries. The data set contains information on the number of procedures, official time, and official cost that a start-up must bear before it can operate legally. Regression techniques are employed to support the underlying hypothesis	The official costs of entry are high in most countries. Countries with heavier regulation of entry have higher corruption and larger unofficial economies, but not better quality of public or private goods. Countries with more democratic and limited governments have fewer entry regulations. The evidence is consistent with the 'grabbing hand' view that entry regulation benefits politicians and bureaucrats.
Dollar, David, and Lant Pritchett. 1998. *Assessing Aid: What Works, What Doesn't, and Why*. New York: Oxford University Press.	Qualitative and quantitative analysis explaining the interaction of government policies and the quality of governance.	'Sound management'—measured by the quality of bureaucracy, rule of law, and the pervasiveness of corruption—increases the effects of financial aid. It also improves social indicators beyond what good policies alone could bring.
Fisher, Stanley. 1993. 'The role of macro-economic factors in growth.' *Journal of Monetary Economics* 32: 485-512.	Regression analog of growth accounting used to present cross-sectional and panel regressions showing relationship between growth and macroeconomic factors.	Growth is negatively associated with inflation, large budget deficits, and distorted foreign exchange markets. Hence good policies are conducive to faster growth.
Friedman, Eric, Simon Johnson, Daniel Kaufmann, and Pablo Zoido-Lobaton. 1999. 'Dodging the grabbing hand: The determinants of unofficial activity in 69	Across 69 countries, higher tax rates are associated with less unofficial activity as a percent of GDP, but corruption is associated with more unofficial activity. Entrepreneurs go underground not	Corrupt governments become small government and only relatively uncorrupt governments can sustain high taxes.

countries.' *Journal of Public Economics.*	to avoid official taxes but to reduce the burden of bureaucracy and corruption. Dodging the 'grabbing hand' in this way reduces tax revenues as a percent of both official and total GDP.	
Glaeser, Edward L. et. al. 2000. 'Measuring trust.' *Quarterly Journal of Economics* 115(3): 811-846.	Combine two experiments and a survey to measure trust and trustworthiness—two key components of social capital. Experiments integrated with surveys to measure individual-level variation in trust and trustworthiness.	Trusting behavior in the experiments is predicted by past trusting behavior outside of the experiments. When individuals are closer socially, both trust and trustworthiness rise.
Hall, Robert and Charles Jones. 1999. 'Why do some countries produce so much more output per worker than others?' *The Quarterly Journal of Economics.*	Cross-country regressions using two indices: one of government anti-diversion policies (GADP) constructed by Knack and Keefer (1995) with data from ICRG, and one from Sachs and Warner (1995) that focuses on openness of a country to trade with other countries.	Differences in capital accumulation, productivity, and therefore output per worker are driven by differences in institutions and government policies.
Hellman, Joel S., Geraint Jones, Daniel Kaufmann, and Mark Schankerman. 2000. 'Measuring governance, corruption, and state capture: Hoe firms and bureaucrats shape the business environment in transition economies.' *World Bank Policy Research Working Paper 2312.* Washington, D.C.	An in-depth empirical assessment of the links between corporate behavior and national governance. Utilizing the BEEPS—the 1999 Business Environment and Enterprise Performance Survey, governance is quantitatively assessed from the perspective of 3000 firms in 20 countries.	Unbundling the measurement of governance and corruption empirically suggests the importance of grand corruption in some countries, manifested in state capture by the corporate sector—through the 'purchase' of decrees and legislation—and by graft in procurement.
Hellman, Joel S., Geraint Jones, and Daniel Kaufmann. 2000. 'Seize the state, seize the day: State capture, corruption, and influence in transition.' *World Bank Policy Research Working Paper 2444.* Washington, D.C.	Empirically investigate the dynamics of capture economy on the basis of new firm-level data from the 1999 Business Environment and Enterprise Survey (BEEPS). Economywide measures for state capture, influence, and administrative corruption are developed.	State capture, influence, and administrative corruption are all shown to have distinct causes and consequences. New entrants turn to state capture in order to compete with influential incumbents. Captor firms purchase from the state private benefits such as secure property rights and removal of obstacles for better performance.
Henisz, Witold J. 2000. 'The institutional environment for economic growth.' *Economics and Politics* 12(1): 1-31.	Derives a new measure of political constraints from a simple spatial model of political interaction that incorporates information on the number of independent branches of government with veto power and the distribution of preferences across and within those branches.	There is an explicit link between the derived objective measure of political constraints and variation in cross-national growth rates.

	The results are derived using simple ordinary least squares, three-stage least squares, and generalized method of moments estimation technique.	
Isham, Jonathan, Daniel Kaufmann and Lant Pritchett. 1997. 'Civil liberties, democracy, and the performance of government projects.' *The World Bank Economic Review* 11(2): 219-42.	Cross-national data set used on the performance of government investment projects financed by the World Bank to examine the link between government efficacy and governance.	The strong effect of civil liberties holds true even when controlling for the level of democracy. Even after controlling for other determinants of performance, countries with the strongest civil liberties have projects with an economic rate of return 8-22 percentage points higher than countries with the weakest civil liberties.
Johnson, Simon, Daniel Kaufmann and Pablo Zoido-Lobaton. 1998. 'Regulatory discretion and the unofficial economy.' *American Economic Review* 88(2):387-392.	Cross-country regressions from Heritage Foundation, Global Competitiveness Survey, ICRG, Freedom House to explain the size of the unofficial economy in three regions: Latin America, OECD, and the former Soviet bloc.	Countries with more regulation tend to have higher share of the unofficial economy in total GDP. Higher tax burden leads to more unofficial activity. Countries with more corruption tend to have a larger unofficial economy.
Johnson, Simon, Daniel Kaufmann, John McMillan and Christopher Woodruff. 1999. *Journal of Public Economics*. ?	Firm-level regressions using unofficial activity of private manufacturing firms in Eastern European countries: Russia, the Ukraine, Poland, Slovakia, and Romania.	A comparison of cross-country averages shows that managers in Russia and the Ukraine face higher effective tax rates, worse official corruption, greater incidence of mafia protection, and have less faith in the court system. The firm-level regressions for three Eastern European countries find that official corruption is significantly associated with hiding output.
Kaufmann, Daniel, Aart Kraay, and Pablo Zoido-Lobaton. 1999. 'Governance matters.' *World Bank Policy Research Working Paper 2196*. Washington, D.C.	Simultaneous model used to isolate the direct effects of differences in governance on three measures of development outcomes: GDP per capita, infant mortality, and adult literacy. They use a very large set of indicators drawn from commercial and non-commerical sources as well as data from WDR 1997. They allocate these indicators to six clusters and use latent variable model to estimate a common element in each cluster	A strong causal relation exists between governance and development outcomes for all six aggregate indicators. They find that these results hold whether or not OECD countries are included in their sample.
Kaufmann, Daniel, Aart Kraay and Pablo Zoido-Lobaton. 1999. 'Aggregating governance indicators.' *World Bank Policy Research Working Paper 2195*. Washington, D.C.	Simple variant of an unobserved components model used on a sample of 160 countries to combine information from different sources into aggregate governance indicators. They include bureaucratic quality, rule of law, and graft.	Aggregate governance indicators are more informative about the level of governance than any individual indicator, but the standard errors associated with estimates of governance are still large relative to the units in which governance is measured.
Kaufmann, Daniel and Shang-	In a general equilibrium model in	Firms that pay more bribes are also likely

Jin Wei. 1999. 'Does grease money speed up the wheels of commerce?' *NBER Working Paper No 7093*. Massachusetts.	which regulatory burden and delay can be endogenously chosen by rent-seeking bureaucrats, red tape and bribery may be positively correlated across firms. Using data from three world-wide firm level surveys, the relationship is examined between bribe payment, management time wasted with bureaucrats, and cost of capital.	to spend more, not less, management time with bureaucrats negotiating regulations, and face higher, not lower, cost of capital.
Keefer, Philip and Stephen Knack. 2000. 'Polarization, politics, and property rights: Links between inequality and growth.' *World Bank Policy Research Working Paper 2418*. Washington, D.C.	Analyze the effects of inequality in the broader context of social polarization.	Polarization causes deterioration in the security of property rights—by making large changes in current policies more likely. The resulting uncertainties in the policy and contractual environment hinder growth.
Knack, Stephen and Philip Keefer. 1995. 'Institutions and economic performance: Cross-country tests using alternative institutional measures.' *Economics and Politics* 7(3): 207-227.	Cross-country regressions using two subjective indices of institutional development. One composite index combines variables such as quality of bureaucracy, corruption in government, rule of law, expropriation risk, and repudiation of contracts by government. The other combines variables such as bureaucratic delays, nationalization potential, contract enforceability, and infrastructure quality.	Institutions that protect property rights are crucial for economic growth. Institutional development increases the rates of convergence between developed and developing countries.
Knack, Stephen and Philip Keefer. 1997. 'Why don't poor countries catch up? A cross national test of institutional explanantion. *Economic Inquiry* 35:590-602.	Cross-country regressions using institutional variables such as the rule of law, the pervasiveness of corruption, the risk of expropriation and contract repudiation.	Institutions are important determinants of 'convergence'—weak institutional systems prevent poor countries from 'catching up.'
Knack, Stephen and Philip Keefer. 1997. 'Does social capital have an economic payoff? A cross-country investigation.' *Quarterly Journal of Economics* 112:1251-1288	Cross-country regressions using indicators of trust and civic norms from the World Values Surveys by Inglehart (1994). The indicators can be interpreted as proxies for quality of informal institutions.	Trust and civic cooperation have significant impacts on economic performance.
Knight, Malcolm, Norman Loayza and Delano Villaneuva. 1996. 'The peace dividend: Military spending cuts and economic growth.' *World Bank Working Paper*. Washington, D.C.	Extension of a standard growth model to exploit both cross-country and time-series dimensions of growth and military expenditures.	Military spending is growth retarding because of its adverse impact on capital formation and resource allocation. Suggests a substantial long-term peace dividend—in the form of higher capacity output per capita.
Landau, Daniel. 1993. 'The economic impact of military expenditures.' *World Bank*	Cross-country regressions of economic growth on military spending	Levels of military spending in developing countries have been falling and are relatively low in regions with economic

Policy Research Working Paper. Washington, D. C.: The World Bank.		problems. Military spending is mostly motivated by external threats. At typical levels (around 4 percent of GDP), military expenditure is not associated with lower rates of economic growth, government social and infrastructure spending, or capital formation, or with higher inflation.
La Porta, et. al. 1997. 'Legal determinants of external finance.' *Journal of Finance.* 52(3): 1131-1150.	Cross-country regressions using measures of legal rules protecting investors and the quality of their enforcement.	Countries with better investor protections have bigger and broader equity and debt markets.
La Porta et. al. 1998. 'Trust in large organizations.' *AEA Papers and Proceedings*: 87(2):333-338	Cross-country regressions using measures of trust from the World Values Surveys.	Trust has important effects on economic performance.
La Porta, Rafael et. al. 1998. 'The quality of government.' *Journal of Law, Economics and Organization* 15: 681-712.		
Manning, Nick, Ranjana Mukherjee, and Omer Gokcekus. 2000. ' Public officials and their institutional environment: An analytical model for assessing the impact of institutional change on public sector performance.' *World Bank Policy Research Working Paper 2427*. Washington, D.C.	A framework for understanding public sector performance through surveys of public officials. Attempts to link the institutional environment and performance, with the institutional environment composed of rule credibility, policy credibility, and resource adequacy&predictability. Institutional rate of returns examined through a logit model.	Emphasizes the existence of heterogeneous incentives and institutional arrangements in the public sector. Shows how the survey data can be used to attest that the prevailing institutional environment largely determines bureaucratic performance. Offers possible courses to challenge prior assertions and to encourage informed speculation on performance pay-offs.
Mauro, Paolo. 1995. 'Corruption and growth.' *Quarterly Journal of Economics* 110(3): 681-712.	Cross-country regressions subjective indices of corruption, the amount of red tape, the efficiency of the judicial system, and various categories of political stability.	Corruption is negatively linked with economic growth.
Mehrez, Gil and Daniel Kaufmann. 2000. 'Transparency, liberalization, and banking crises.' World Bank Policy Research Working Paper 2286. Washington, D.C.	Present a dynamic model of credit and investment and discuss the role of transparency. Provide empirical evidence to support the model.	Lack of transparency increases the probability of a banking crisis following financial liberalization. In a country where government policy is not transparent, banks may tend to increase credit above the optimal level.
Perotti, Roberto. 1996. 'Growth, income distribution, and democracy: What the data say?' *Journal of Economic Growth* 1 (June): 149-187.	Investigates the relationship between income distribution, democratic institutions, and growth.	More equal societies have lower fertility rates and higher rates of investment in education. Very unequal societies tend to be politically and socially unstable, which is reflected in lower rates of investment and growth. The data do not support the idea that more equal societies, particularly those with democratic institutions, grow

		faster because they generate fewer demands for redistribution and therefore fewer distortions.
Rauch, James E. and Peter B. Evans. 2000. 'Bureaucratic structure and bureaucratic performance in less developed countries.' *Journal of Public Economics* 74: 49-71.	Collect a new data set on structural features of bureaucracies of 35 less-developed countries and construct indices of bureaucratic structure. Ordinary least squares regressions used to predict the ratings of bureaucratic performance.	The measure for meritocratic recruitment is a statistically significant determinant ratings supplied by two of three country risk agencies. The importance of competitive salaries and internal promotion could not be clearly established.
Rodrik, Dani. 1997. 'TFPG controversies, institutions, and economic performance in East Asia.' NBER *Working Paper No. W5914.*	Cross-country regressions and correlations using index constructed by Easterly and Levine (1996) using data from Knack and Keefer (1995).	Institutional quality, initial income, and initial education do well in rank ordering East Asian countries according to their growth performance.
Rodrik, Dani. 1999. 'Where did all the growth go? External shocks, social conflict, and growth collapses.' *Journal of Economic Growth* 4(4): 385-412.	Sketches a simple model to clarify the interactions among shocks, domestic conflict, and institutions of conflict management. Presents empirical evidence to support the hypothesis.	Domestic social conflicts are a key to understanding why growth rates lack persistence and why so many countries have experience a growth-collapse since the mid-1970s. Countries that experienced the sharpest drops in growth after 1975 were those with divided societies and with weak institutions of conflict management.
Sachs, Jeffrey and Andrew Warner. 1995. 'Economic reform and the process of global integration.' *Brookings Papers on Economic Activity* 1: 1-95.	Cross-country indicators of trade openness as the measures of each country's orientation to the world economy.	Convergence occurred among open economies from 1970-89 and accelerated growth in countries that have undertaken market reforms.
Schneider, Friedrich, and Dominik H. Enste. 2000. 'Shadow economies: Size, causes, and consequencies.' *Journal of Economic Literature* 38: 77-114.		
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Wei, Shang-Jin. 2000. 'Natural openness and good government.' *World Bank Policy Research Working Paper 2411.* Washington, D.C.	Develops a two-period model with two countries to offer a new perspective on the link between openness and corruption.	A 'naturally more open economy'—as determined its size and geography—devotes more resources to building good institutions and displays less corruption.