



Testing the Links

How strong are the links between institutional quality and economic performance?

Hali Edison

A GREAT deal of economic research in recent years suggests that institutions are vital for economic development and growth. Typically, economists have looked at the level of economic development, as measured by per capita GDP, and have found that differences in per capita incomes around the globe—ranging from only about \$100 a year in parts of sub-Saharan Africa to over \$40,000 in some of the advanced economies—are closely related to differences in the quality of institutions. The aim of an IMF research study has been to take stock of recent work relating to the impact of institutions on three dimensions of economic performance—level of economic development, growth, and volatility of growth—and advance the debate through new empirical analysis. In particular, the study tries to estimate the empirical strength of these relationships; the impact that improvements in institutions could have on incomes and growth in different regions; and the role that economic policies play, both in contributing to stronger institutions and in supporting better economic outcomes more generally.

To determine to what extent institutions affect economic performance, we developed a simple econometric framework relating the macroeconomic outcomes for each country to (1) a measure of its institutions (see Box 1); (2) a measure (or set of measures) of macroeconomic policy; and (3) a set of exogenous variables. This framework allows one to consider competing explanations that have been put forward in the literature—notably, the roles of institutions, policies, and geography—and to assess their quantitative impact. The study finds that institutional quality does have a significant effect, not only on the level of income but also on growth and the volatility of growth. The findings are also consistent for all measures of institutions, but we rely on the

aggregate governance index for the illustrations. Given the dominance of institutional factors in explaining economic performance, is there a role for policies? The results show that there is.

Institutions and income level

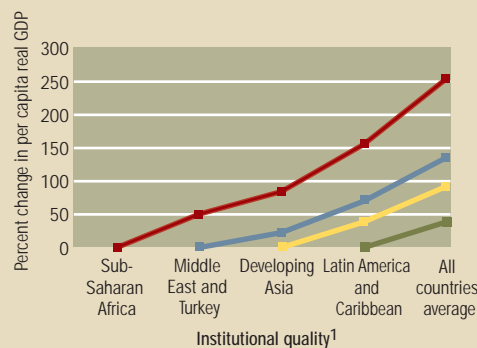
We began by looking at the impact of institutions on incomes. The research found that institutions have a statistically significant influence on economic performance, substantially increasing the level of per capita GDP. These findings hold whether institutional quality is measured by broad-based indicators (such as an aggregate of various perceptions of public sector governance) or by more specific measures (for example, the extent of property rights protection or application of the rule of law). Furthermore, the empirical results take into account the possibility of reverse causation (see Box 2).

These results suggest that economic outcomes could be substantially improved if developing countries strengthened the quality of their institutions. As shown in Chart 1, for example, an improvement in sub-Saharan Africa's institutions

from their current average quality to that of developing Asia would represent an 80 percent increase in per capita incomes in sub-Saharan Africa (from about \$800 to over \$1,400). The potential benefits to sub-Saharan Africa continue to rise markedly as its institutions improve. There is a 2½-fold increase in regional income if sub-Saharan Africa's institutions are strengthened to the all-country average; the income gain is much larger if institutional quality rises to the level of advanced economies. While these calculations are mainly for illustrative purposes, since such gains would be neither immediate nor automatic in practice, the results are striking, providing an empirical sense of the importance of institutions for economic development.

Chart 1
Impact on income

Better institutions could boost income. For example, the red line shows how much income grows if sub-Saharan Africa improves its institutions to match the quality of those in other regions.



Source: IMF staff calculations.
Note: Figures are not to scale. They understate differences in the quality of institutions across countries.
¹Measured by the aggregate governance indicator.

Defining and measuring institutions

What do we mean by institutions?

The term institutions has been defined in different ways. Douglass North describes institutions very broadly, as the formal and informal rules governing human interactions. There are also narrow (and easier to grasp) definitions of institutions that focus on specific organizational entities, procedural devices, and regulatory frameworks. At a more intermediate level, institutions are defined in terms of the degree of property rights protection, the degree to which laws and regulations are fairly applied, and the extent of corruption. It is narrower than North's definition, which includes all of the norms governing human interactions. Much of the recent research into determinants of economic development has adopted the intermediate definition.

How is institutional quality measured?

Recent empirical analyses have typically considered three relatively broad measures of institutions—the quality of governance, including the degree of corruption, political rights, public sector efficiency, and regulatory burdens; the extent of legal protection of private property and how well such laws are enforced; and the limits placed on political leaders. The measures themselves are not objective but, rather, the subjective perceptions and assessments of country experts or the assessments made by residents responding to surveys carried out by international organizations and nongovernmental organizations.

The first of these measures—the *aggregate governance index*—is the average of the six measures of institutions developed in a 1999 study by Daniel Kaufman, Art Kraay, and Pablo Zoido-Lobaton. These measures include (1) *voice and accountability*—the extent to which citizens can choose their government and have political rights, civil liberties, and an independent press; (2) *political stability and absence of violence*—the likelihood that the government will not be overthrown by unconstitutional or violent means; (3) *government effectiveness*—the quality of public service delivery and competence and political independence of the civil service; (4) *regulatory burden*—the relative absence of government controls on goods markets, banking systems, and international trade; (5) *rule of law*—the protection of persons and property against violence and theft, independent and effective judges, and contract enforcement; and (6) *freedom from graft*—public power is not abused for private gain or corruption.

A second measure focuses on *property rights*. This measure indicates the protection that private property receives. Yet another measure, *constraints on the executive*, reflects institutional and other limits placed on presidents and other political leaders. In a society with appropriate constraints on elites and politicians, there is less fighting between various groups for control of the state, and policies are more sustainable.

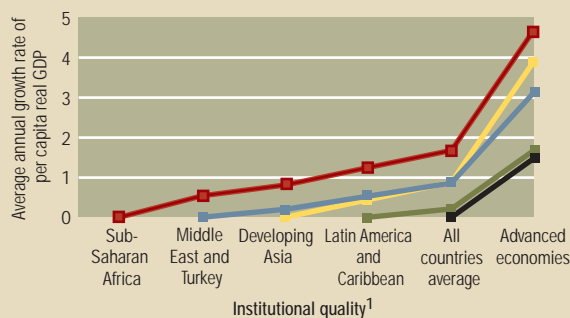
Institutions and growth

We then looked at the role of institutions in economic growth. Just as with the level of per capita GDP, the results indicate that institutions have a strong and significant impact on per capita GDP growth. This impact may partly reflect the role of institutions in enhancing the sustainability of policies.

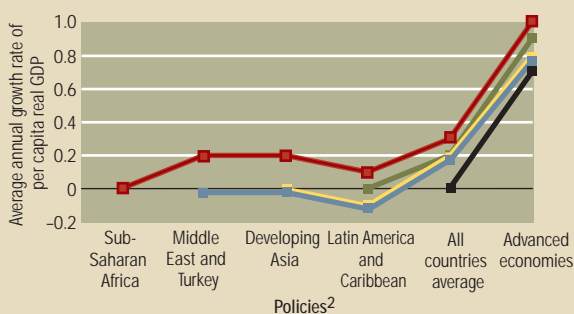
Chart 2

Impact on growth

Institutional improvements could have a significant impact on growth rates.



Changes in the policy environment could also exert an important, though somewhat smaller, impact.



Source: IMF staff calculations.

Note: Figures are not to scale. They understate differences in the quality of institutions and in the total private credit ratio across countries.

¹Measured by the aggregate governance indicator.

²Measured by the ratio of private credit to GDP.

On average, improving institutional quality by one standard deviation—corresponding roughly to the difference between institutional quality in Cameroon and the average quality of institutions in all countries in the sample—would lead to an increase of 1.4 percentage points in average annual growth in per capita GDP. The implications of institutional improvements for growth across different regions are illustrated in Chart 2. Again, the empirical results suggest substantial gains. For instance, annual growth in per capita GDP in sub-Saharan Africa would increase by 1.7 percentage points if countries there had institutions as good as the average quality for the entire sample. Countries from other regions would also gain from adopting higher-quality institutions, as shown in the chart.

Institutions and volatility

The results also indicate that institutions have a strong effect on volatility (measured as the standard deviation of the growth rate of per capita GDP): the better the institutions, the lower the volatility of growth. In addition, the impact of institutions appears to be significant even when policy measures such as differences in inflation, exchange rate overvaluation, openness, and government deficits are controlled for. The results suggest that an increase of one standard deviation in the aggregate governance index measure would cut volatility by about 25 percent. The impact of gradual

improvements in institutional quality across different regions is illustrated in Chart 3. For example, if institutions in sub-Saharan Africa were as good as those in the average country in the sample, countries in that region would experience a 16 percent reduction in economic volatility.

Institutions and policies

Given the strength of these findings for institutional influences, what role do policies play in economic development? There is an extensive literature showing that policies have a significant impact on macroeconomic outcomes. Typically, though, when institutional and policy variables are considered together, institutions are found to be the dominant influence on economic performance, with policies having little independent influence. In the empirical work, some positive results are found for macroeconomic policies: a country's level of financial development, which may be highly influenced by policy, has a significant positive impact on growth (Chart 2); and the extent of exchange rate overvaluation, possibly reflecting broader macroeconomic imbalances, increases the volatility of growth (Chart 3).

On the whole, however, the impact of policies appears to be weaker than that of institutions for several reasons. In the case of per capita GDP, these results are probably not surprising. The cross-country differences in income reflect the impact of policies conducted over centuries and may be poorly proxied

Box 2

Empirical problems

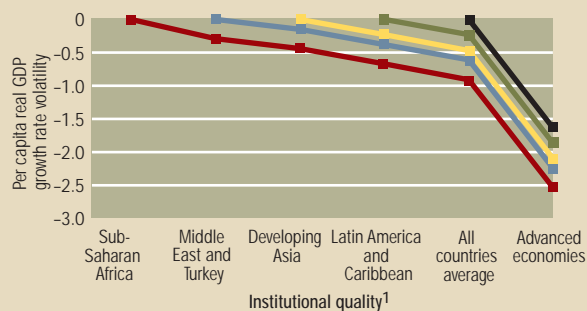
There are two distinct and important problems related to identifying the effect of institutions. First, because of their subjective nature, all of the measures of the quality of institutions contain errors. Second, institutions are endogenous. Economies are not exogenously endowed with institutions; rather, good institutions require time and resources to develop, suggesting that richer countries are more likely to enjoy good institutions. So one needs to be careful in the empirical assessment not to capture reverse causality—that stronger economic performance is itself likely to contribute to better institutions.

In econometric terms, researchers must identify a good set of instruments for measuring institutions. One approach has been to include an instrumental variable for institutions using historically determined components of institutions. For instance, some studies have used settler mortality as an instrument. These studies argue that settler mortality had an important effect on the type of institutions that were built in the lands colonized by the European powers (see article on page 27). An alternative approach, which allows for a larger sample of countries and was used in the 2003 IMF staff study, has relied on instruments based on language use, namely, the fraction of the population that speaks English and the fraction of the population that speaks other European languages.

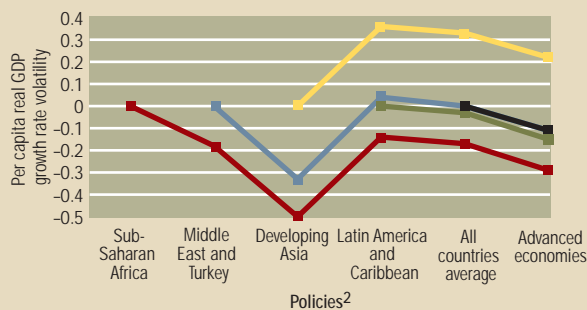
Chart 3

Impact on growth volatility

Improvements in institutions could help reduce instability.



Sustainable macroeconomic policies could also make an important contribution.



Source: IMF staff calculations.

Note: Figures show change in standard deviation and are not to scale. They understate differences in the quality of institutions and in the exchange rate overvaluation.

¹Measured by the aggregate governance indicator.

²Measured by the exchange rate overvaluation.

by policies measured only over recent decades, as in the analysis. Moreover, measures of institutional quality and of policies are often closely related, partly because the subjective measures of institutions used in the analysis—for example, perceptions of government effectiveness and regulatory burdens—represent an amalgam of policy and institutional factors. More generally, the correlation between institutions and policies points to the fact that sound policies need to be supported and sustained by good institutions, while weak institutions may reduce the chance that good policies will be adopted or may undermine policy effectiveness. In other words, the bottom line is not that policies are unimportant but that their influence on economic performance is already reflected in the strength of institutions. ■

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This article draws on Chapter 3 of the IMF's World Economic Outlook April 2003. This chapter was prepared by Maitland MacFarlan, Hali Edison, and Nicola Spatafora, and is available at <http://www.imf.org/external/pubs/ft/weo/2003/01/index.htm>.