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The Impact of Economic Security on Bank Deposits and Investment[1]

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Abstract

This paper highlights the importance of institutions in explaining the variation of investment rates and of two measures of bank deposits across countries. A general index of economic security is created for 130 countries. Its explanatory power is compared with measures of specific institutional arrangements. For investment as well as for bank deposits, specific institutional factors are shown to be highly significant and outperform the general index.

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Summary

Recent studies of the influence of institutions on economic activity have used diverse and not always convincing measures of institutional quality. This paper proposes an index of economic security that has been constructed as a weighted average of 12 institutional variables for 130 countries. The index shows that economic security is lowest for sub-Saharan African countries. It also supports the notion that an economy's long-term performance may be influenced by the quality of its institutions.

The explanatory power of the index of economic security has been tested in estimating the variation of three variables across countries: the investment rate, and two ratios of bank deposits to broad money. For each of these variables, institutional factors are shown to be highly significant. For investment, this result confirms the findings of previous studies, whereas the paper breaks new ground in indicating how institutional factors can explain the decisions of economic agents in allocating their wealth.

A general index may underestimate the importance of specific institutional factors in shaping specific economic behaviors. To account for this specificity, this paper also proposes ad hoc measures that draw only on those institutional characteristics that are relevant to the variable under consideration. The explanatory power of these ad hoc measures is then compared to that of the general index.

I. INTRODUCTION

The institutions of an economy influence the kind and level of economic activity. If institutions are weak, economic agents find it difficult, if not impossible, to engage in the complex, long-term, and multicontract impersonal exchanges with third party enforcement that characterize industrial economies. When property rights are imperfectly defined, economic activity is often restricted to interpersonal exchange in small-scale production and local trade to avoid the problems of contract enforcement. By leading individuals to engage in transactions that fall short of exploiting an economy's potential, weak institutions may constrain the overall performance of an economy (Williamson, 1995, pp. 181-82). In this sense, institutions "are the underlying determinant of the long-run performance of economies" (North, 1990, p. 107).

In explaining private fixed investment, several empirical studies have found diverse institutional factors to be important. Investment has been shown to be one channel through which institutions have a robust impact on growth (Servén, 1996; Levine and Renelt, 1992; and Aron, 1997). By contrast, only limited attention has been given to the importance of institutions in explaining the willingness of individuals to deposit their money with depository organizations in the formal financial sector,[2] even though this willingness can be expected to be sensitive to institutional risk.

An economy's institutional environment is multifaceted, and there is no reason to assume that each of its facets is of equal relevance to different economic activities. This apprehension provides the basis of this paper's distinction between specific institutional arrangements and a general index of economic security. An institutional arrangement is defined as the set of institutional features that govern an economic behavior and includes only those facets of the institutional environment that are relevant to this specific behavior (Lin and Nugent, 1995, p. 2307; and Williamson, 1995, p. 174). Measures of institutional arrangements should be ad hoc, that is, sensitive to the specific channels through which institutions may influence the economic behavior under consideration.

In contrast to the specific nature of institutional arrangements, the concept of economic security refers to the totality of an economy's institutional characteristics, including its organizations, laws, customs, and ideology (Lin and Nugent, 1995, p. 2307; and Williamson, 1995, p. 174). Economic security can be defined as the "institutional framework that inspires confidence of savers and investors and guarantees the physical security of individuals and the legal security of transactions" (Camdessus, 1996, pp. 3-5). The index of economic security sums up in one variable the multitude of channels through which institutions may affect

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[2]Despite the absence of any systematic study, the literature on deposits offers numerous references to the importance of institutional factors. For example, Kattan (1974) finds the interest rate of little importance in explaining the currency-to-deposit ratio in Jordan. He explains this ratio by the high degree of political instability and violence that prevailed in Jordan in the late 1960s.

economic activity. Calculated as an average of several indicators, the index loses much of the information in each indicator. It aggregates institutional features that may be relevant to some but not to other variables. Therefore, it is expected to be weaker in explaining the variation of investment and bank deposits across countries than ad hoc measures for specific institutional arrangements.

The remainder of this paper is structured as follows. The next section presents the sources of institutional data, provides definitions of the two measures of deposits, and lays out the method of constructing the index of economic security and the specific institutional arrangements. Section III introduces and discusses the index of economic security. For private investment and the two measures of deposits, Section IV presents their sensitivity to institutional measures. The conclusion interprets these findings with respect to the suitability of institutional arrangements and the index of economic security as measures of institutional quality.

II. METHODOLOGY

This paper measures the quality of institutions in terms of 12 institutional variables. Ten of these have been obtained from the *International Country Risk Guide* (ICRG), compiled and sold by the Political Risk Services Group, Inc., a private risk-rating agency based in Syracuse, New York.[3] While these ratings have been assessed for foreign investors, this paper assumes that they also reflect the risks of domestic economic agents. The other two variables are measures of democracy, obtained from the Gastil index published by Freedom House, New York. The definitions of the variables are reported in Appendix Table A1.

These 12 institutional variables have been retrieved for 130 countries for the years 1985, 1990, and 1995. On the basis of their definitions and correlation coefficients (reported in Appendix Table A3) they have been aggregated into five components: the level of political stability, the democratic character of the political system,[4] the quality of the bureaucracy, the quality of the legal system, and the level of violence.[5]

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[3]The provision of these data by the Political Risk Services Group is gratefully acknowledged.

[4]For a cautionary note on the link between democracy and economic security, see de Haan and Siermann (1996) and Clague and others (1996).

[5]Political stability has been defined in terms of government stability (GOVSTAB) and the performance of the economy in the light of popular expectations (PERFECON); democracy in terms of civil liberties (CILIB) and political rights (POLRI); the quality of the legal system in terms of the rule of law (RULAW) and the risk that contracts will be repudiated by the government (REPCON); the quality of the bureaucracy in terms of the level of corruption (CORRUPT) and the quality of the bureaucracy (QUALBUR). The level of violence has been

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For each of three dependent economic variables—the investment ratio and two measures of bank deposits—a basic model has been estimated that explains its variation in terms of noninstitutional variables. This model serves as a starting point for assessing the importance of institutional variables. The two measures of bank deposits are called contract-intensive money (CIM)[6] and highly contract-intensive money (HCIM). Contract-intensive money is the ratio of demand, time, savings, and foreign currency deposits to broad money, that is, (M2-C)/M2, with M2 being broad money and C denoting currency in circulation. Highly contract-intensive money (HCIM) is the ratio of time, savings, and foreign currency deposits to broad money. These designations reflect the view that demand deposits are less risky than term deposits: whereas the former can be withdrawn any time, the latter imply a commitment for the period to maturity. In consequence, we would expect measures of institutional risk to be more strongly correlated with HCIM than with CIM.

A general index of economic security (ECOSEC) has been constructed as follows. Each of the five components defined above has first been calculated as the average of the constitutive variables.[7] The level of economic security has then been calculated as the average of the five components. This procedure assumes that each of the five components is relevant to the dependent variable of interest.

In accordance with their specific nature, ad hoc proxies for the specific institutional arrangements have been constructed for each of the dependent variables. In a first step, 12 institutional variables have been added one by one to a basic economic model of the dependent variable. The institutional arrangements have then been proxied by the principal components of those institutional variables that show a level of significance of at least 0.1 in that stepwise regression.

III. INDEX OF ECONOMIC SECURITY

In 1995, the average level of economic security for 130 countries was 6.36, with 0 denoting the lowest and 10 denoting the highest level of security. The countries with the five lowest grades of economic security are in sub-Saharan Africa, whereas the top 15 positions are taken by industrialized countries (Table 1). Two Eastern European countries—Hungary and the Czech Republic—and two of the so-called Asian tigers—Hong Kong (China) and the

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[5](...continued)
defined by the level of racial tensions (RACTENS), the risk of external conflict (EXTCON), the risk of civil war (CIWAR), and the level of political terrorism (POLTERR).

[6]The CIM variable has been suggested by Clague et al (1996) as an indicator of property rights.

[7]The original variables were distributed on different scales. Their scales have been standardized to range from 0 to 10, with 10 denoting the highest level of security.

Republic of Korea—fall in the top quintile and display higher levels of economic security than some industrialized countries. In order to further explore the institutional differences between separate groups of countries, the sample has been divided into eight groups, roughly following the categories of the IMF's *International Financial Statistics*.[8] Each country is weighted according to its purchasing power parity (PPP) weight.

From 1985 to 1995, the economic security levels of different groups of countries slightly converged, as reported in Table 2. While remaining fairly constant in the industrial and Group of Seven (G-7) countries, the level of economic security increased in every other group of countries. In the Latin American and Caribbean countries, it increased only marginally, as only the legal system improved by more than 1 point. The Eastern European countries experienced a modest increase, largely resulting from a strong rise of democracy and improvements in the legal systems and bureaucracies. In African countries,[9] the level of economic security also increased only modestly, as violence decreased and legal systems improved.

The strongest increase in economic security has been experienced by the tiger economies. While, as in most other groups of countries, the level of political stability in these economies decreased, the level of security increased in every other aspect. For the Asian and the Middle Eastern countries, the level of democracy dropped sharply from 1985 to 1995. This decline was more than offset by extraordinary improvements in the legal systems and strongly decreasing levels of violence. This pattern clearly distinguishes the Asian and the Middle Eastern countries from the African countries: while each of these three groups of countries enjoyed a decline in violence, only the African countries experienced an increase in the level of democracy. The improvement in the legal systems turned out to be more modest in the African than in the Middle Eastern or the Asian countries. Consequently, in 1995, for every indicator except the political system, the group of African countries displayed the highest level of risk.

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[8]One indicator of each group's degree of institutional homogeneity is the standard deviation of its level of economic security. The tigers, the Group of Seven (G-7) countries, and the industrial countries are the most homogeneous groups of countries, with standard deviations of 0.34, 0.36, and 0.49, respectively. They are followed by the Asian countries (0.77), the Latin American and Caribbean countries (0.82), the Middle Eastern countries (1.1), and the Eastern European countries (1.33). The African countries (excluding South Africa) are the least homogeneous group (1.50). Each group is more homogeneous than the total sample, which displays a standard deviation of 1.67.

[9]This group of African countries excludes South Africa, as its level of economic security of 7.5 grade points in 1995 is well above the average of other countries. Although Table 2 also contains an African country group that includes South Africa, all other references in the paper to "African countries" are to the group excluding South Africa.

If the quality of institutions indeed constrains economic activity, we would expect the index of economic security to be correlated with indicators of economic performance. For each group of countries, Appendix Table A4 lists the average annual growth of GDP per capita over the period from 1985 to 1995, and the average rate of private fixed investment from 1993 to 1995, as well as the levels of GDP per capita, CIM, HCIM, and the savings rate in 1995. Simple ordinary least squares (OLS) regressions (Appendix Table A5) show that each of these variables is positively and significantly correlated with the index of economic security. This outcome is consistent with the growing literature in this area, which finds several institutional measures significant in explaining different rates of growth (see, for example, Alesina, 1997). With an adjusted R^2 of 0.65, the index of economic security is conspicuously correlated with the level of GDP per capita.[10] While not allowing us to draw causal inferences, this strong relationship is consistent with the notion that the low quality of an economy's institutions may constrain its growth potential.

Previous studies have been inconclusive about the relationship between private savings and measures of institutional quality (see, for example, Mwega, 1996, p. 28). To some extent, this ambiguity may stem from the different variables researchers have chosen as proxies for institutions.[11] Private saving and economic security are positively correlated. The index of economic security might therefore reflect what Edwards (1995, p. 38) referred to in interpreting his results: "A drastic increase of private savings has usually been affected by an important factor not captured in the regression analysis: the creation of an institutional environment that instills confidence in small savers." As is well known, there are general problems with data on savings (for an overview, see Gersovitz, 1988, pp. 413-18). Possibly in part owing to better data quality, CIM and HCIM show a significantly stronger correlation with economic security than private saving does. A goodness of fit of 46 percent shows a remarkably strong association between CIM and economic security. The correlation between economic security and HCIM is also strong.

IV. EMPIRICAL RESULTS

For each of three economic variables, this section describes a basic economic model, which is then augmented by the inclusion of institutional variables. In each case, the institutional variables are first introduced in a specific arrangement, represented by the principal component of the variables which are statistically significant. Second, they are introduced in the standard "ECOSEC" combination which, as expected, does not perform as well as the

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[10]In a similar exercise, Mauro (1995) regresses the level of GDP per capita on an index of bureaucratic efficiency. He reports a goodness of fit of 0.68 for a sample of 67 countries, both industrialized and nonindustrialized.

[11]For example, Hadjimichael and Ghura (1995) use an indicator of the degree of democracy, based on the Gastil index, as a proxy for progress toward political freedom and institutional reform. Edwards (1995) uses three variables of political instability.

specific arrangement. Last, dummy regional variables are introduced to test the explanatory power of the particular institutional combinations embodied in the various regions. The regressions are based on estimations of cross-sectional data for 1995.

A. Contract-Intensive Money (CIM)

For CIM, the basic model is reported as Regression 1 in Table 3. The share of broad money held as deposits has been related to the depth of the financial system, the ratio of broad money to GDP (BRMY), the deposit rate (DEPRATE), and the accessibility of depository institutions, as proxied by the share of the total population that lives in urban areas (URBPOP)[12]. Whereas all variables show the expected positive sign, only the deposit rate is significant (at the 0.1 level). Also relevant are the level of GDP per capita (GDPCAPPP), the level of education (EDUCAT), and macroeconomic uncertainty. The coefficient of GDP per capita is positive but not significant. The share of the population educated at the secondary level (EDUCAT) and the standard deviation of changes in the real effective exchange rate over the preceding five-year period (STDVREER) show the expected signs and are significant.

Added individually to the basic model, four institutional variables turn out to be significant.[13] Three of these variables—the variable that measures the risk of contracts being repudiated by governments (REPCON), the risk of civil war (CIWAR), and the risk of external conflict (EXTCON)—may reflect the same risk, for example, the risk of expropriation related to a change of government. Adding variables one by one to the basic model does not allow us to determine whether they tell different stories. The fourth institutional variable—the level of political rights (POLRI)—may be interpreted as measuring the extent to which the government is held accountable to the public for its decisions and actions. Thanks to the higher level of public control, depositors would then be better protected against government interference in democracies than under nondemocratic regimes.

Summed up by the first principal component of these four variables (INSTARR1), the institutional arrangement increases the basic model's explanatory power from 0.68 to 0.76 (regression 2 in Table 3).[14] This is strong and robust evidence that institutional differences are

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[12] The definitions and sources of the noninstitutional variables are listed in Appendix Table A2.

[13]The results of estimations with individual institutional variables are reported in Appendix Table A6.

[14]Adding the second, third, and fourth principal components to the estimation reported as regression 2 does not significantly increase the overall importance of institutional differences. The first principal component shows a high correlation with each of the four variables from

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significantly associated with cross-country variations in the level of CIM. This association is closer than would be inferred from using the general index of economic security instead of the ad hoc construct. However, once nonlinearities are taken into account, the R^2 of the general index almost equals that of the ad hoc proxy (regression 3).

Regional dummies do not single out particular behavior, except for the Latin American and Caribbean countries (regression 4). As reported in Table 2, one distinctive institutional feature of the Latin American and Caribbean countries is their high level of democracy, a level higher than in any other group of nonindustrial countries. Indeed, the level of democracy turns out to be the only institutional component that can explain the level of CIM in the Latin American and Caribbean countries.[15]

B. Highly Contract-Intensive Money (HCIM)

Highly contract-intensive money (HCIM) has been estimated in terms of the same explanatory variables as CIM. In the basic model, all explanatory variables show the expected sign (regression 1 in Table 4). Only the depth of the financial system and the standard deviation of the exchange rate show a significant correlation with the level of HCIM. Contrary to expectations, the deposit rate remains insignificant. Two dummy variables correct for the low levels of HCIM in the G-7 and industrial countries.[16]

Testing the importance of institutional factors for HCIM yields results similar to those obtained for CIM. The most important single variable is the risk that contracts will be repudiated by the government (REPCON). The estimates suggest that HCIM is more sensitive to this risk than CIM. As with CIM, the level of political rights (POLRI) and the risk of external conflict (EXTCON) also show a significant correlation with the level of HCIM. As each of these institutional variables shows a more significant association with HCIM than with CIM, the findings support the view that HCIM is more sensitive to institutional differences than CIM.

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which it has been constructed (i.e., 0.85 with REPCON, 0.72 with POLRI, 0.83 with CIWAR, and 0.75 with EXTCON).

[15]Details of unreported regressions are available from the author.

[16]As reported in Appendix Table A4, the Group of Seven (G-7) countries display a lower rate of HCIM than the Middle Eastern, Asian, and Latin American countries. Several of the G-7 and the industrial countries are negative outliers, e.g., the US (displaying a rate of HCIM of 18.6 percent), Norway (31 percent), Italy (43.4 percent), and Finland (44.6 percent). This may indicate that sophisticated financial markets of the G-7 and industrial countries provide economic agents with a broad array of options that are not counted as deposits.

Introducing the principal components of these variables into the basic model considerably increases the goodness of fit (regression 2). The significance of not only the first but also of the third principal component suggests that the three significant variables contain two sources of variation that both correlate significantly with different levels of HCIM.[17] Once again, this specification outperforms the simple use of the general index of economic security. Although the index's explanatory power increases considerably once nonlinearities are taken into account, it remains considerably below that of the proxy for the institutional arrangement (regression 3).

Regional dummies again show that the basic model underestimates the level of HCIM in the group of Latin American and Caribbean countries (regression 4). Neither the ad hoc measure—the proxy for the institutional arrangement—nor the general index of economic security, nor any institutional variable can explain the high level of HCIM in these countries.

C. Private Fixed Investment

The basic model explains the ratio of private fixed investment to GDP as a function of the level of GDP per capita (GDPCAPPP), the rate of population growth (POPGRWTH), measures of macroeconomic uncertainty, and several variables related to economic policy, with dummy variables for the G-7 and industrial countries (regression 1 in Table 5). Of these, financial depth and two measures of uncertainty—the standard deviations of annual changes in the real effective exchange rate and the terms of trade (STDVREER and STDTOT)—show a significant correlation with the investment rate. This finding supports Servén's (1997) interpretation of the literature that the stability and the predictability of the incentive framework may be more important than the level of the incentives themselves.

Added individually to the basic model, all institutional variables show the expected positive sign, with the exception of the two variables of democracy.[18] Six of these show a significant correlation with the private investment rate. The most significant correlation holds for a variable that relates to the quality of the legal system, RULAW. If an economy lacks impartial mechanisms to resolve contractual disputes, investors may have to resort to bribes in order to

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[17]The correlation coefficients between the principal components and the underlying variables do not allow us to identify any of the two significant components with any of the three variables. The first principal component shows a similarly high correlation with each of the three variables (0.78 with POLRI, 0.83 with REPCON, and 0.78 with EXTCON); meanwhile, the third component shows the strongest correlation with the risk that contracts will be repudiated by the government, but it is also correlated with the two other variables (0.30 with POLRI, -0.56 with REPCON, and 0.2892 with EXTCON).

[18]The lack of any significant relationship between democracy and private investment confirms the findings by Knack and Keefer (1995).

enforce contracts. As contracts based on corruption are usually not enforceable, this may leave investors with a significantly higher cost of doing business and persistent uncertainty (Schmidt-Hebbel, Servén, and Solimano, 1996; and Shleifer, 1995). In addition, the risk of civil war (CIWAR), the level of political terrorism (POLTERR), the quality of the bureaucracy (QUALBUR), and the level of corruption (CORRUPT) are significantly correlated with the rate of private investment to GDP. This result is consistent with Mauro's (1995) finding that higher levels of corruption are associated with a significantly worse-than-average investment performance.[19]

The first principal component computed from these variables shows a highly significant correlation between institutional differences and different investment rates across countries (regression 2 in Table 5).[20] By contrast, the general index of economic security performs rather poorly (regression 3).[21] The Asian tiger economies are the only group of countries whose investment rates differ significantly from the basic model. The proxy for the institutional arrangement explains this difference (regression 5).

V. CONCLUSION

This paper has proposed a general index of economic security as a measure of institutional quality. The index has been tested in explaining the variation of private fixed investment and

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[19] The risk of a change of government (GOVSTAB) also turns out to be significant.

[20] Adding the other principal components to the model reported as regression 3 does not significantly increase its explanatory power. The first principal component shows a high correlation with all the individual variables except for GOVSTAB. Its correlation coefficients are 0.91 with RULAW, 0.80 with CORRUPT, 0.79 with QUALBUR, 0.83 with POLTERR, 0.82 with CIWAR, and 0.53 with GOVSTAB.

[21] Absent the correction for non-linear effects, the index's significance at the 0.1 level is not robust to model specifications: Once the G-7 and the industrial Countries are dropped from the sample, the index of economic security loses its significance. The explanatory power of the index of economic security (ECOSEC) hinges critically on the assumptions upon which it is based. As mentioned above, the index assumes that high levels of democracy foster economic transactions. Whereas the estimations of CIM and HCIM confirm this assumption, it does not hold in estimating the investment rate: the two measures of democracy are not only insignificant but also negatively correlated with investment, once other explanatory variables are held constant. This result may explain the index's weak performance in predicting different levels of investment. In order to test this possibility, the index has been modified to exclude the two variables that measure democracy: this alternative index is called economic security except democracy (ECOSECED). Once nonlinearities are taken into account, ECOSECED provides almost as strong an institutional explanation for different investment rates as the ad hoc measure (regression 4).

two ratios of bank deposits to broad money. This paper has also suggested a way of constructing ad hoc proxies for specific institutional arrangements. These measures differ from the general index of economic security in that they are constructed not as averages of the individual variables but as their principal components, and they pool only the subset of variables that show a significant correlation with the dependent variables. As expected from the way in which these two measures have been constructed, the ad hoc proxies consistently perform better than the general index of economic security in explaining deposits and private investment.

The quality of institutions has been shown to be highly significant in explaining the variation of the two measures of deposits and private fixed investment across countries. Whereas this paper confirms the importance of institutional variables that other studies have reported for private investment, it presents new evidence of the significance of institutional variables in explaining different levels of deposits. As expected, highly contract-intensive money (HCIM) has been found to be more sensitive to institutional differences than contract-intensive money (CIM). Strictly speaking, these findings are partial correlations that do not allow us to draw causal inferences. However, they provide empirical support for the notion that economic behavior may be influenced by the quality of institutions. This idea is also suggested by the strong correlation between the index of economic security and some key macroeconomic variables, in particular, the level of GDP per capita. The evidence presented in this paper provides support for the position of prominence that institution building has come to occupy on governments' and donors' agendas.

The findings also confirm the expectation that distinct combinations of institutional features are relevant to various economic activities. The set of institutional characteristics that has been found to be important in explaining private investment differs from the combination of institutional features associated with deposits. For example, several measures of bureaucratic quality are significantly correlated with investment but irrelevant to deposits. This finding should caution researchers against following untested assumptions in selecting institutional variables. Of course, several variables may reflect the same source of institutional risk. Factor analysis, as employed in this paper, is one method of testing this possibility without losing the information the individual variables contain.

As a second-best measure of institutional differences, the general index of economic security has performed remarkably well. For contract-intensive money and the private investment rate, the index's explanatory power has turned out to be superior to that of any single variable. The performance of the index hinges on two conditions. First, as shown for private investment, the index has to be based on correct assumptions with respect to the relevance of different institutional features. Second, as the relationship between institutional quality and economic activity may be nonlinear, appropriate corrections may significantly increase the index's explanatory power. For the ratio of bank deposits to broad money, the importance of institutional differences has been found to decrease with increasing levels of economic security.

These results suggest two directions for further inquiry. Given its focus on composite measures of institutional quality, this paper does not explore the extent to which different variables reflect the same source of institutional risk. For both investment and deposits, measures related to the quality of the legal system have shown the strongest correlation, and it is conceivable that other variables—in particular, variables related to the political system and the level of violence—also reflect risks whose sources lie in the legal system. One promising way of testing the robustness of different institutional variables would consist of applying the extreme bounds analysis suggested by Leamer to institutional variables. This approach has been discussed and modified by Levine and Renelt (1992) and others (Levine and Zervos, 1993; and Sala-i-Martin, 1997).

This paper's second suggestion refers to the range of variables that may be used in further empirical work. Although a broad array of institutional variables have been used here, they only roughly approximate the broad range of institutional features that may affect economic activity. Drawing heavily on data provided by one single source, this paper has neglected some facets of the institutional environment that others have shown to be important. In particular, the concept of social capital has been neglected. Furthermore, the subjective way in which the variables used in this paper have been measured (as discussed in the appendixes) is a source of concern and requires further tests of consistency. Not only cross-checking but also pooling variables from different sources may strengthen the confidence researchers may have in indicators of institutional quality.[22] There is ample room for refining the quality of composite measures of institutional quality by broadening the range and improving the quality of the data on which they draw.

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[22]One example of an institutional index that pools variables from different sources is the index of corruption, jointly compiled by Transparency International, Berlin, and a research team at the University of Göttingen, Germany. This index draws on ten different sources; for details, see http://www.transparency.de

Table 1. Ranking of Countries According to Level of Economic Security in 1995

First Quintile		Second Quintile		Third Quintile		Fourth Quintile		Fifth Quintile	
Somalia	1.60	Liberia	2.03	Algeria	4.07	Nicaragua	6.03	Hong Kong, China	8.02
		Sierra Leone	2.13	Togo	4.15	Panama	6.07	Poland	8.15
		Zaire	2.40	Guinea-Bissau	4.22	Dominican Rep.	6.10	Korea, Rep.	8.20
		Sudan	2.58	Haiti	4.35	Qatar	6.10	Cyprus	8.22
		Iraq	2.60	Myanmar	4.40	Suriname	6.12	Czech Rep.	8.23
		Angola	3.27	Guinea	4.52	Colombia	6.13	United Kingdom	8.23
				Niger	4.58	Ecuador	6.18	Portugal	8.32
				Gambia	4.65	Pap. N. Guinea	6.20	Hungary	8.32
				Yugoslavia	4.67	Bolivia	6.22	Belgium	8.40
				Nigeria	4.72	India	6.25	Malta	8.40
				Cameroon	4.77	El Salvador	6.38	France	8.50
				Senegal	4.82	Philippines	6.38	Japan	8.58
				Ethiopia	4.85	Oman	6.40	USA	8.68
				Korea, DPR	4.87	Malawi	6.43	Ireland	8.75
				Guatemala	4.93	Brazil	6.47	Canada	8.82
				Congo	5.03	Bahrain	6.48	Australia	8.83
				Burkina Faso	5.07	Kuwait	6.52	Germany	8.83
				Yemen, Rep.	5.07	Romania	6.53	Sweden	8.90
				Uganda	5.07	Venezuela	6.53	Austria	8.92
				Russia	5.12	Thailand	6.55	Iceland	8.95
				Mali	5.20	Paraguay	6.57	Denmark	9.00
				Peru	5.27	Albania	6.58	Finland	9.00
				Vietnam	5.30	Morocco	6.63	Norway	9.03
				Cuba	5.37	Uruguay	6.65	Netherlands	9.08
				Sri Lanka	5.37	Mongolia	6.68	New Zealand	9.08
				Indonesia	5.40	Trinidad & Tobago	6.87	Switzerland	9.17
				Mozambique	5.42	Malaysia	6.97	Luxembourg	9.25
				Cote d'Ivoire	5.43	Guyana	7.00		
				Tanzania	5.45	Jamaica	7.15		
				Gabon	5.47	Argentina	7.22		
				Honduras	5.47	Jordan	7.22		
				Madagascar	5.47	Botswana	7.22		
				Bangladesh	5.52	Bulgaria	7.22		
				Kenya	5.53	Brunei	7.28		
				Zambia	5.55	Slovak Rep.	7.37		
				Saudi Arabia	5.58	Singapore	7.42		
				Turkey	5.58	Israel	7.43		
				Libya	5.62	Spain	7.48		
				New Caledonia	5.73	Bahamas	7.55		
				Pakistan	5.73	Chile	7.57		
				Lebanon	5.75	South Africa	7.57		
				Iran	5.77	Costa Rica	7.63		
				Egypt	5.82	Greece	7.73		
				Tunisia	5.83	Namibia	7.77		
				Mexico	5.88	Italy	7.82		
				UAE	5.92	Taiwan, Prov. of China	7.92		
				Zimbabwe	5.92				
				Ghana	5.95				
				Syria	5.97				
				China, PR	5.98				

Sources: Author's calculations, based on data from the *International Country Risk Guide* and the Gastil index.

Table 2. Levels of Risk and Economic Security in Groups of Countries

	Political Stability			Political System			Legal System			Bureaucracy			Violence			Economic Security		
	1985	1990	1995	1985	1990	1995	1985	1990	1995	1985	1990	1995	1985	1990	1995	1985	1990	1995
African Countries	4.51	5.07	4.64	1.95	2.17	3.54	4.25	4.07	5.89	5.50	5.71	5.45	5.04	4.68	7.64	4.25	4.23	5.43
Afr. Countr. excl. South Africa	4.49	4.68	4.40	1.77	2.06	2.30	3.95	3.99	5.29	4.02	4.58	4.56	5.14	4.90	7.29	3.87	3.90	4.77
Asian Countries	6.47	4.04	5.86	3.68	3.54	2.07	5.08	4.40	8.00	4.91	4.73	5.60	5.50	5.68	8.51	5.13	4.48	6.01
Eastern European Countries	5.85	3.69	4.46	2.58	4.66	6.15	5.73	5.63	7.02	4.99	5.47	6.08	7.21	7.54	7.41	5.27	5.40	6.22
Latin Am. & Caribb. Countries	4.07	5.34	4.91	6.64	7.28	6.28	5.02	5.61	6.71	5.52	5.57	5.28	7.75	7.71	8.57	5.80	6.30	6.35
G7 Countries	7.69	6.91	5.06	9.85	9.93	9.43	9.08	9.37	9.62	9.14	9.01	9.04	8.87	8.90	9.73	8.93	8.83	8.58
Ind. Countries	7.30	5.95	5.04	9.69	9.93	9.74	8.62	9.07	9.74	8.65	8.69	8.56	8.59	9.05	9.56	8.57	8.54	8.53
Middle Eastern Countries	5.03	4.85	5.27	3.01	3.02	1.61	4.13	4.10	7.85	4.71	4.88	5.61	4.50	5.77	8.58	4.28	4.53	5.78
Tigers	6.94	6.34	5.85	3.61	6.11	6.11	7.16	7.74	9.33	6.33	5.92	8.02	7.96	7.49	9.52	6.18	6.82	8.04
World	**6.80**	**5.93**	**5.22**	**7.61**	**7.78**	**6.83**	**7.48**	**7.60**	**8.72**	**7.56**	**7.45**	**7.51**	**7.82**	**7.91**	**9.13**	**7.45**	**7.34**	**7.49**

Sources: Author's calculations, based on data from the *International Country Risk Guide* and the Gastil index; PPP weights have been obtained from the IMF's *World Economic Outlook* databases.

Table 3. Estimation of Contract-Intensive Money (CIM)

	(1)	(2)	(3)	(4)
Method of Estimation	GLS	GLS	GLS	GLS
constant	0.7022***	0.773988***	0.1574	0.678817***
	15.746	*19.855*	*1.052*	*9.535*
GDPCAPPP	1.66E-06	-7.40E-07	1.24E-06	4.01E-06
	0.795	*-0.418*	*0.506*	*1.237*
BRMY	0.0449	0.0080	0.0090	0.0376
	1.087	*0.212*	*0.232*	*1.087*
INF	-0.0120	-0.0228	0.0396	0.0647
	-0.108	*-0.241*	*0.378*	*0.604*
STDVREER	-0.0056***	-0.0054***	-.00517***	-0.0054***
	-5.727	*-6.307*	*-6.14*	*-3.724*
DEPRATE	0.0025*	0.0017	0.0008	0.0017
	1.692	*1.344*	*0.614*	*1.16*
URBPOP	0.0005	0.0006	0.0004	-0.0004
	0.764	*1.196*	*0.771*	*-0.455*
EDUCAT	0.00161***	0.00091*	0.001295**	0.002***
	2.709	*1.77*	*2.173*	*2.758*
ASIA				0.0583
				1.089
AFR				0.0012
				0.018
LAC				0.084273*
				1.682
G7				0.0062
				0.272
TIG				-0.0034
				-0.127
MEA				0.2376
				0.632
EASTEUR				-0.0322
				-0.618
INSTARR1		0.038***		
		4.679		
ECOSEC			0.17***	
			3.57	
ECOSECSQ			-.0115***	
			-3.081	
Adj. R2	0.688	0.761	0.759	0.748
N	75	75	75	75

Note: The numbers in italics below the coefficients are the t-values. The symbols *,**, and *** indicate significance at the 0.1, 0.05, and 0.01 levels, respectively.

Table 4. Estimation of Highly Contract-Intensive Money (HCIM)

	(1)	(2)	(3)	(4)
Method of Estimation	GLS	GLS	GLS	GLS
constant	0.3603***	0.504***	-0.2500	0.34681***
	5.312	*7.636*	*-1.017*	*3.314*
GDPCAPPP	2.75E-06	-7.66E-07	1.81E-06	4.97E-06
	0.449	*-0.121*	*0.263*	*0.739*
BRMY	0.2206**	0.15923*	0.1885**	0.201986**
	2.547	*1.783*	*2.153*	*2.309*
INF	-0.1558	-0.1252	-0.1065	0.0398
	-1.154	*-1.152*	*-0.898*	*0.345*
STDVREER	-0.0027**	-0.0010413	-.00224**	-.00275*
	-2.591	*-0.918*	*-2.096*	*-1.783*
DEPRATE	0.0022	0.0002	0.0006	-0.0002
	0.934	*0.092*	*0.281*	*-0.102*
URBPOP	0.0016	0.0014	0.0017	-0.0004
	1.149	*1.071*	*1.22*	*-0.309*
EDUCAT	0.0011	-0.0005	0.0005	0.0016
	1.105	*-0.481*	*0.474*	*1.658*
G7	-0.227***	-0.2546***	-.2129**	-0.1318589
	-2.891	*-3.17*	*-2.564*	*-1.26*
IND	-0.10856	-0.149**	-.08305	-0.01137
	-1.497	*-2.127*	*-1.15*	*-0.117*
ASIA				0.13897*
				1.674
AFR				-0.0147
				-0.187
LAC				0.219***
				3.369
TIG				0.1031
				1.181
MEA				0.117386*
				1.8
INSTARR1		0.09607***		
		4.697		
INSTARR2		-0.0252		
		-1.282		
INSTARR3		-0.0609*		
		-1.763		
ECOSEC			0.1892**	
			2.265	
ECOSECSQ			-0.01271*	
			-1.863	
Adj. R2	0.488	0.588	0.530	0.631
N	76	76	76	76

Note: The numbers in italics below the coefficients are the t-values. The symbols *,**, and *** indicate significance at the 0.1, 0.05, and 0.01 levels, respectively.

Table 5. Estimation of Private Fixed Investment (PRIVINV)

	(1)	(2)	(3)	(4)	(5)
Method of Estimation	GLS		GLS	GLS	GLS
constant	0.1584***	0.1796062***	-0.0420	-0.0211	0.15408***
	5.334	*6.473*	*-0.535*	*-0.295*	*5.468*
GDPCAPPP	0.00000254	0.000000716	1.82E-06	7.34E-07	0.00000145
	1.586	*0.43*	*1.147*	*0.43*	*0.736*
POPGRWTH	-0.0048	-0.0062	-0.0007	-0.0029	-0.0044
	-0.505	*-0.734*	*-0.067*	*-0.32*	*-0.427*
BRMY	0.0742257***	0.0550352***	.0602**	0.05376**	0.0605727**
	2.914	*2.345*	*2.45*	*2.263*	*2.4*
PUBINV	-0.0601	0.0175	-0.0129	-0.0005	-0.0022
	-0.213	*0.069*	*-0.05*	*-0.002*	*-0.009*
DEFY	0.1389	0.0842	0.1005	0.0948	-0.0408
	0.856	*0.495*	*0.577*	*0.571*	*-0.174*
STDTOT	-0.0033775**	-0.00346***	-.003398**	-.0035***	-0.0035288***
	-2.422	*-2.716*	*-2.496*	*-2.674*	*-2.69*
STDINF	0.0008	0.0012	0.0016	0.0013	0.0009
	0.796	*1.149*	*1.52*	*1.262*	*0.778*
INF	-0.0180	-0.0167	-0.0190	-0.0148	-0.0124
	-1	*-0.854*	*-0.969*	*-0.763*	*-0.593*
STDVREER	-0.0009444**	-0.0009957**	-.00075*	-.00094**	-0.001234***
	-2.28	*-2.595*	*-1.673*	*-2.311*	*-3.111*
IND	-0.0781***	-0.090***	-0.068**	-.07767***	-0.07393**
	-3.065	*-3.853*	*-2.142*	*-2.985*	*-2.558*
G7	-0.0828381	-0.086354	-0.07281**	-.07479**	-0.070*
	-2.75	*-3.131*	*-2.2*	*-2.587*	*-1.986*
AFR					0.0230
					1.026
TIG					0.0645
					1.573
MEA					-0.0113
					-0.496
EASTEUR					0.0250
					0.784
ASIA					0.0250
					1.081
INSTARR1		0.0141841***			0.01608***
		3.202			*3.124*
ECOSEC			0.05289**		
			2.489		
ECOSECSQ			-0.003449*		
			-1.761		
ECOSECED				0.0423179**	
				2.177	
ECOSECEDSQ				-0.0019	
				-1.11	
Adj. R2	0.448	0.505	0.485	0.500	0.534
N	93	93	93	93	93

Note: The numbers in italics below the coefficients are the t-values. The symbols *,**, and *** indicate significance at the 0.1, 0.05, and 0.01 levels, respectively.

DATA DOCUMENTATION

A. Discussion of institutional variables

The subjective measurement of the institutional variables used in this paper creates several problems. First, the data may not have been measured independent of the economic phenomena whose variation they have been used to explain. This would lead to endogeneity bias. Researchers face the difficulty that it is usually not possible to scrutinize how institutional variables have been assessed; instead, they often have to rely on information provided by the agencies and organizations that have made the data available.

Ten of the variables were collected by the Political Risk Services Group, Inc. for its *International Country Risk Guide* (ICRG). Its staff measures the data as follows. In reviewing a country's risk grades, ICRG staff consider recent information collected from public sources, interviews with economists and academics, published government policy documents, and information on payments delays reported by business and banks engaged in trade with the country in question. On the basis of this information, ICRG staff may update each country's grade. To ensure the consistency of the staff's assessment across countries, the company's Managing Director reviews the grades assigned to each country. As for the two variables on democracy, Freedom House measures the level of civil liberties and political rights using standardized questionnaires (Freedom House, 1996). While this methodology is encouraging, the information made available by these two agencies is not sufficient to ensure that the results of the estimations do not suffer from endogeneity bias.

The subjective method of measuring the variables also implies a high risk of measurement error. The risk grades assigned to some countries raise questions about the variables' comparability across countries.[23] In order to examine the consistency of the data set, two tests

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[23] Some features of the database are difficult to reconcile with conventional views. For example, the mean of the variable measuring the risk of external conflict is 9.27, i.e., considerably higher than the other variables' respective mean. Furthermore, the minimum value of this variable is 5. This is remarkable because at least two of the sample's countries were involved in military conflict in 1995, i.e., Russia with respect to the Chechen Republic, and the former Yugoslavia. On a scale from 0 to 10, with 10 denoting the highest level of security, the risk of external conflict is assessed as 9 for Russia and as 7 for the former Yugoslavia. Furthermore, the data suggest that in 1995 the level of political stability was higher in the Asian countries than in the G-7 and the industrial countries (in weighted averages, 5.86 grade points for the Asian countries versus 5.06 for the G-7 and 5.04 for the industrial countries). The higher level of political stability the data show for the Asian countries might reflect the weights assigned to specific countries: among the Asian countries, the People's Republic of China, accounting for 49.31 percent of the weighted Asian average, has been assigned a relatively high grade (6.25). Among the G-7 countries, the most important

(continued...)

have been conducted. The first test scrutinizes the summary statistics and the simple correlation coefficients of the variables with respect to any feature that may call into question the data's overall consistency. The 12 variables show considerable differences with respect to their distributions and means. The two variables obtained from the Freedom House index—POLRI and CILIB—display a higher standard deviation than the variables obtained from ICRG. The means of the two variables related to the quality of the legal system—RULAW and REPCON—are higher than the means of other variables, in particular the variables related to political stability (PERFECON and GOVSTAB) and democracy (POLRI and CILIB). This implies that in absolute terms, the legal system has been considered less risky than the average level of political stability.

The pairwise correlation coefficients between the variables, reported in Appendix Table A3, indicate that they are all positively correlated. For some variables, the level of correlation confirms what may be expected on the basis of their definitions.[24] With three exceptions, all correlations are statistically significant at the 0.01 level.

The second way of probing the quality of the data consists of correlating them with institutional variables from other sources that measure the same or similar phenomena. To that effect, four variables have been obtained from two other sources, Business Environment Risk Intelligence (BERI) and the Heritage Foundation, both based in Washington, D.C.[25] The variables relate to the quality of the bureaucracy and the legal system. For the correlation

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(...continued)
country, the United States, show a relatively low level of political stability , i.e., 5 grade points. Among the industrial countries, the most important country, Spain, displays the lowest level of political stability (4.17). However, these weights fall short of explaining the difference in the level of political stability between the Asian and the industrialized countries. Once weights are neglected, the data still seem to be remarkable: the same level of political stability (5.47) is shown for Pakistan, India, Australia, New Zealand, Norway, Ireland, France, Germany, and Japan. These countries were considered to be more stable than the United States (5), or Belgium, Greece, and Portugal (4.58 each).

[24] For example, the variable that measures the "law and order tradition" (RULAW) is highly correlated with three variables that measure the risk of domestic violence, i.e., RACTENS, POLTERR, and CIWAR. These three variables show a higher degree of correlation with RULAW than with the second variable that is related to the legal system (REPCON). Whereas RULAW measures the degree to which a country's legal institutions are accepted by its citizens, REPCON measures the extent to which contracts are protected against government interference. Therefore, the different levels of correlation are consistent with the definitions of the two legal variables.

[25]The Heritage Foundation's support in permitting the use of its data in this project is gratefully acknowledged.

coefficients to support our confidence in the quality of the ICRG variables, they have to display two features. First, variables whose definitions suggest that they refer to the same institutional phenomena would be expected to display high levels of correlation. Second, the correlation coefficients would have to reflect differences in the variables' foci. (The results are available from the author.)

B. Annotation to the Construction of the Indices of Economic Security

In the course of constructing the indices of economic security (ECOSEC and ECOSECED), some inconsistencies and omissions in the databases had to be dealt with. The measures taken to rectify these problems were as follows. In constructing a time series from the ICRG index, the April observation has been selected on a random basis to represent the respective year. For some countries, ICRG staff only started to collect data after April 1985. In these cases, the grades of the first April for which the risk has been measured have been used as the value for 1985. This step has been taken with respect to Burkina Faso (measurement started in May 1985), Côte d'Ivoire (September 1986), The Gambia (August 1985), Guinea-Bissau (November 1985), Malta (April 1986), Mongolia (April 1986), and Suriname (September 1985). For countries that only recently came into existence or have undergone territorial changes that are assumed to have considerably affected their institutional structure, observations related to the time prior to this transformation have been dropped. This rule applies to Russia, the Czech Republic, the Slovak Republic, Namibia, and Yemen. By contrast, the territorial change of Germany is assumed to have been characterized by a high degree of institutional continuity; therefore, the observations for Germany for 1985 and 1990 have been included in the sample.

For Hong Kong (China) and New Caledonia, no Freedom House variables on the level of democracy have been available. Therefore, their grade of economic security (ECOSEC) is based on only four indicators. In consequence, for these countries the grades of ECOSEC and ECOSECED are identical.

Table 6. Definitions of Institutional Variables

Name	Source	Definition
Individual Variables used for the Index of Economic Security and Institutional Arrangements		
PERFECON	ICRG	This variable measures the "deviation of popular economic expectations from economic reality" (ICRG). This variable is considered a measure of popular support of the current government on the basis of the way the economy has developed. The greater the perceived gap between economic expectations and reality, the higher the perceived risk. Range of data: 0-12
GOVSTAB	ICRG	This variable reflects the stability of the government in power. It is supposed to capture "the viability of the current government, based on the degree of stability of the regime and its leaders, the probability of the effective survival of the government, and the continuation of its policies if the current leader dies or is replaced" (ICRG). Range of data: 0-12
RACTENS	ICRG	This variable reflects the "degree of tension ... attributable to racial, nationality, or language divisions" (ICRG). Range of data: 0-6
EXTCON	ICRG	This variable measures the risk of external conflict a country faces. The ICRG defines external conflict as encompassing "invasion, border threats, geopolitical disputes, foreign-supported insurgency, and full-scale warfare" (ICRG). Range of data: 0-10
POLRI	Freedom House	This variable measures political rights. The grade is based on the degree to which individuals have control over those who govern. The variable is defined to capture freedom of the political process, defined as "the system by which the polity chooses the authoritative policy makers and attempts to make binding decisions affecting the national, regional, or local community. In a free society, this means the right to vote and compete for public office, and for elected representatives to have a decisive vote on public policies. A system is genuinely free or democratic to the extent that the people have a choice in determining the nature of the system and its leaders" (Freedom House). Range of data: 1-7
CILIB	Freedom House	Called "Civil Liberties," this variable measures the right of the individual (e.g., independence of the judiciary, freedom of the press, freedom of assembly and demonstration, freedom of political organization, free trade unions, free religious institutions). Freedom House defines civil liberties as "the freedom to develop views, institutions, and personal autonomy apart from the state" (Freedom House). Range of data: 1-7
RULAW	ICRG	Called "Law and Order Tradition", this variable reflects "the degree to which citizens of a country are willing to accept the established institutions to make and implement laws and adjudicate disputes." A grade corresponding to low risk is assigned to countries "with an established law and order tradition ... sound political institutions, a strong court system, and provision for an orderly succession of power" (ICRG). Range of data: 0-6
REPCON	ICRG	Called "Repudiation of Contracts by Governments", this variable reflects the risk faced by foreign businesses, contractors, and consultants "of a modification in a contract taking the form of repudiation, postponement, or scaling down" (ICRG). Range of data: 0-10

Table 6. Definitions of Institutional Variables (continued)

Name	Source	Definition
CORRUPT	ICRG	This variable reflects the degree of corruption. Corruption is expected to be encountered "in the form of demands for special payments and bribes connected with import and export licenses, exchange controls, tax assessments, police protection, or loans" (ICRG). Forms of "excessive patronage, nepotism, job reservations, and 'favor-for-favors' "are also considered risky for foreign business. Given the inherent difficulties in observing corruption, ICRG staff points out that "in assesing the corruption risk, ... ICRG staff look first at how long a government has been in power continuously." This approach is based on the assumption that the risk of corruption increases with the time a government or a person has been in power. On this basis, the PRS Group points out that "the highest risk ratings, i.e., the lowest perceived risks, tend to signify a democratic country whose government has been in office for less than five years, (...) an intermediate rating indicates a country whose government has been in office for more than 10 years, ... and the lowest ratings are given to countries ... where the government has been in power for more than 10 years" (ICRG). Range of data: 0-6
QUALBUR	ICRG	Called "Quality of the Bureaucracy", this variable measures the strength and quality of the bureaucracy as a factor capable of minimizing revisions of policy in the context of changing governments. A strong bureaucracy is defined as having "the strength and expertise to govern without drastic changes in policy or interruptions in government services" and to be "somewhat autonomous from political pressure and to have an established mechanism for recruitment and training" (ICRG). Range of data: 0-6
POLTERR	ICRG	Called "Political Terrorism", this variable measures "the extent to which dissidence is expressed through political terrorism, such as armed attacks, guerrilla activity, or attempted assassinations" (ICRG). Range of data: 0-6
CIWAR	ICRG	Representing the risk of civil war, this variable measures the "probability that terrorist opposition to a government or its policies will turn into a violent internal political conflict. The opposition may comprise a territory, a large minority group,or an economic class" (ICRG). Range of data: 0-6
Composite Measures of Institutional Quality		
ECOSEC		Index of economic security, constructed as the average of political stability (defined in terms of GOVSTAB and PERFECON), the political system (POLRI, CILIB), the quality of the legal system (REPCON, RULAW), the quality of the bureaucracy (QUALBUR), and the level of violence (RACTENS, POLTERR, EXTCON, CIWAR). Range of data: 0-10
ECOSECSQ		ECOSEC squared.
ECOSECED		Modified index of economic security, constructed as the weighted average of the level of political stability, the quality of the bureaucracy, the quality of the legal system, and the level of violence (all defined as in ECOSEC). Range of data: 0-10
ECOSECEDSQ		ECOSECED squared.
INSTARR1[-3]		The institutional arrangement, measured as the first [second, and third] principal component of those individual variables which are significant at least at the 0.10 level when added one by one to the basic model. The institutional arrangement is defined specifically for each dependent variable.

Table 6. Definitions of Institutional Variables (concluded)

Name	Source	Definition
Additional Variables from other Sources		
PROPRI	Heritage Foundation	This variable measures "the degree to which private property is a guaranteed right ..., the extent to which the government protects and enforces laws to protect private property, the possibility that the state will expropriate private property." Furthermore, "this factor also takes into account the country's court and legal system" (Heritage Foundation). Range of data: 1-5
ENFCON	BERI	This variable measures the "risk that governments will repudiate or otherwise unilaterally change the terms of contracts with foreign businesses" (Keefer and Knack, 1996, p. 7). This variable measures "the relative degree to which contractual agreements are honored and complications presented by language and mentality difference" (Knack and Keefer, 1995, p. 226). Range of data: 0-4
RISKNAT	BERI	This variable measures the "risk that governments will repudiate or otherwise unilaterally change the terms of contracts with foreign businesses" (Keefer and Knack, 1996, p. 7). It measures the risk of "expropriation for no compensation" and "preferential treatment for nationals" (Knack and Keefer, 1995, p. 226). Range of data: 0-4
BURDEL	BERI	Called "Bureaucratic Delay", this variable assigns grades of low risk to bureaucracies which have the "strength and expertise to govern without drastic changes in policy or interruption or government service" (Keefer and Knack, 1996, p. 2). It measures the "speed and efficiency of the civil service including processing customs clearances, foreign exchange remittances, and similar applications" (Knack and Keefer, 1995, p. 226). Range of data: 0-4

Table 7. Definitions of Economic Variables

Name	Definition	Source
BRMY	Broad money as percentage of GDP in 1995.	WEO
CIM	Contract-intensive money, defined as ratio of demand, time, savings, and foreign currency deposits to broad money resident sectors held in 1995; calculated as (Money + Quasi Money - Currency Outside Banks)/(Money + Quasi Money).	IFS
DEFY	Ratio of central government balance to GDP in 1995.	WEO
DEPRATE	Interest rate offered for deposits in 1995.	IFS
EDUCAT	Gross enrollment of students of all ages at the secondary-school level (general, vocational, and teacher training) as a percentage of school age children as defined by each country and reported to UNESCO for 1990. Gross enrollment may be reported in excess of 100 percent if some pupils are younger or older than the country's standard range of secondary school.	World Bank
GDPCAPPP	Nominal GDP per capita, weighted by purchasing power parity weights, in 1995.	WEO
GDPGRAV	Average of annual growth rate of GDP per capita from 1985 to 1995.	WEO
HCIM	Highly contract-intensive money, defined as ratio of time, savings, and foreign currency deposits to broad money resident sectors held in 1995; calculated as (Money + Quasi Money - Currency Outside Banks - Demand Deposits)/(Money + Quasi Money).	IFS
INF	Inflation rate in 1995, based on the consumer price index.	WEO
POPGRWTH	Population growth rate in per cent per year, measured for 1994.	World Bank
PRIVINV	Average of the annual ratios of private fixed investment to GDP over the period 1993-95.	WEO
PRIVSAV	Ratio of private saving to GDP in 1995.	WEO
PUBINV	Average of the annual ratios of public fixed investment to GDP over the period 1993-95.	WEO
STDINF	Standard deviation of the yearly inflation rates over the period 1990-95.	WEO
STDTOT	Standard deviation of the annual changes of the terms of trade over the period 1990-95.	WEO
STDVREER	Standard deviation of the annual changes of the real effective exchange rate over the period 1990-95.	IMF's Information Notice System
URBPOP	Urban population as share of total population in 1994.	World Bank

Explanation of Sources: *WEO:* *World Economic Outlook* of the IMF
IFS: *International Financial Statistics* of the IMF

Table 8. Correlation Coefficients of Institutional Variables

	PERFECON	GOVSTAB	RACTENS	EXTCON	POLRI	CILIB	RULAW	REPCON	CORRUPT	BURQUAL	POLTERR	CIWAR
PERFECON	1.000											
	130											
GOVSTAB	0.6601***	1.000										
	130	130										
RACTENS	0.4567***	0.3371***	1.000									
	130	130	130									
EXTCON	0.3852***	0.2325***	0.4137***	1.000								
	130	130	130	130								
POLRI	0.3121***	0.013	0.3556***	0.4054***	1.000							
	128	128	128	128	128							
CILIB	0.3559***	0.052	0.3893***	0.3648***	0.9248***	1.000						
	128	128	128	128	128	128						
RULAW	0.5674***	0.4002***	0.6669***	0.3101***	0.4015***	0.4746***	1.000					
	130	130	130	130	128	128	130					
REPCON	0.7293***	0.4595***	0.5954***	0.4219***	0.4852***	0.5625***	0.7127**	1.000				
	130	130	130	130	128	128	130	130				
CORRUPT	0.4431***	0.2540***	0.5022***	0.3122***	0.5812***	0.6068***	0.7013**	0.6390***	1.000			
	130	130	130	130	128	128	130	130	130			
BURQUAL	0.4807***	0.2172*	0.4010***	0.3067***	0.5422***	0.5948***	0.6948**	0.7170***	0.7382***	1.000		
	130	130	130	130	128	128	130	130	130	130		
POLTERR	0.4768***	0.3983***	0.6729***	0.4129***	0.3582***	0.4321***	0.7157**	0.5290***	0.5106***	0.5169***	1.000	
	130	130	130	130	128	128	130	130	130	130	130	
CIWAR	0.5961***	0.4619***	0.6456***	0.4481***	0.4195***	0.4187***	0.6812**	0.6506***	0.5146***	0.4971***	0.7126***	1.000
	130	130	130	130	128	128	130	130	130	130	130	130

Sources: *International Country Risk Guide* ; and Gastil index.

Note: The numbers below the coefficients are the number of observations. The symbols *,**, and *** indicate significance at the 0.1, 0.05, and 0.01 levels, respectively.

Table 9. Indicators of Economic Performance for Country Groups

Year(s) or reference	ECOSEC 1995	GDPGRAV Av. 1985-95	GDPCAPPP 1995 in US$	PRIVINV Av. 1993-95	PRIVSAV 1995	CIM 1995	HCIM 1995
African countries	4.84	0.00	716.59	0.109	0.092	0.670	0.372
Asian countries	5.83	0.03	1200.38	0.148	0.191	0.805	0.629
Eastern European countries	7.03	0.00	4254.52	0.147	0.204	0.819	0.535
Latin American & Caribb. countries	6.31	0.01	2901.68	0.127	0.124	0.857	0.649
G-7 Countries	8.49	0.02	26079.29	0.157	0.211	0.927	0.552
Industrial countries	8.74	0.02	25249.03	0.153	0.207	0.926	0.675
Middle Eastern countries	5.82	-0.01	6050.82	0.144	0.217	0.811	0.592
Tiger economies	7.88	0.06	18576.58	0.238	0.286	0.902	0.749
Total nonindustrialized countries	5.85	0.01	3288.58	0.133	0.150	0.783	0.540
Total industrialized countries	8.66	0.02	25501.72	0.154	0.208	0.927	0.641

Sources: Author's calculations, based on the *International Country Risk Guide* and the Gastil index; the IMF's *World Economic Outlook*, and the IMF's *International Financial Statistics*.

Table 10. Regression of Macroeconomic Variables on Economic Security

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable	**GDPGRAV**	**PRIVINV**	**GDPCAPPP**	**PRIVSAV**	**CIM**	**HCIM**
constant	-0.0352	0.0297	1262.028	0.00228	0.41008	0.01828
	-3.838	*1.224*	*2.068*	*0.071*	*9.915*	*0.226*
ECOSEC	0.00681	0.0166	1.022	0.02489	0.06222	0.0879
	4.923	*4.591*	*15.034*	*5.16*	*9.98*	*6.604*
Exponent of ECOSEC			4.5			
Adj. R2	0.1589	0.155	0.649	0.1932	0.466	0.3142
N	124	110	123	108	114	94

Sources: Author's calculations, based on the International Country Risk Guide and the Gastil Index; the IMF's *World Economic Outlook*, and the IMF's *International Financial Statistics*.
The numbers in italics below the coefficients are the t-values.

Table 11. Regression Results of Individual Institutional Variables

	CIM		HCIM		PRIVINV	
	Coeff./t-value	R-square	Coeff./t-value	R-square	Coeff./t-value	R-square
Basic Model		0.6884		0.4879		0.4482
Political Stability						
GOVSTAB	-0.00063 *-0.052*	0.6884	0.02099 *1.065*	0.4996	0.010486* *1.848*	0.4658
PERFECON	0.01336 *0.777*	0.6913	0.0171 *0.732*	0.4911	0.00957 *0.895*	0.459
Political System						
POLRI	0.0084** *2.196*	0.7134	0.01509** *2.334*	0.5264	-0.000886 *-0.308*	0.4491
CILIB	0.00491 *1.188*	0.6933	0.007899 *0.957*	0.4936	-0.0012254 *-0.347*	0.4492
Legal System						
RULAW	-0.00238 *-0.302*	0.6888	-0.00716 *-0.666*	0.4899	0.00959*** *2.709*	0.4867
REPCON	0.03568*** *3.058*	0.7432	.05719*** *3.928*	0.5562	0.0035686 *0.684*	0.4519
Bureaucracy						
CORRUPT	-0.00103 *-0.15*	0.6885	-0.00611 *-0.538*	0.4899	0.0067209* *1.714*	0.4676
QUALBUR	0.01225 *1.535*	0.702	0.008577 *0.647*	0.4915	0.0078* *1.736*	0.4747
Violence						
RACTENS	0.00596 *1.306*	0.6942	0.0007 *0.074*	0.488	0.003036 *1.164*	0.4542
EXTCON	0.02037* *1.994*	0.7136	0.03342** *2.145*	0.5206	0.00268 *0.453*	0.4497
POLTERR	0.0087 *1.598*	0.7003	0.0011137 *0.124*	0.488	0.005696* *1.722*	0.4745
CIWAR	0.0181*** *3.389*	0.7349	0.01184 *1.333*	0.4976	0.006597** *2.263*	0.4739

Sources: *International Country Risk Guide and Gastil Index.*

Note: The numbers in italics below the coefficients are the t-values. The symbols *,**, and *** indicate significance at the 0.1, 0.05, and 0.01 level, respectively.

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