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Political Instability, Freedom, and Economic Growth: Some Further Evidence

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# Political Instability, Freedom, and Economic Growth: Some Further Evidence\*

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## I. Introduction

Over time, the impact of both political and institutional factors on the rate of economic growth has received a lot of attention in the economic literature. Since Adam Smith (if not before) it has been observed that economic performance depends in part on political and institutional factors. Unfortunately, attempts to discover how and under what conditions such factors impinge on economic performance often did not progress beyond anecdote.<sup>1</sup> It is only recently that more systematic attempts were undertaken to analyze the importance of political and institutional factors in explaining cross-country variances in economic growth. For instance, many researchers have examined whether the democratic character of national political procedures and institutions can help explain cross-country differences in national development. L. Sirowy and A. Inkeles reviewed 13 studies, all of which attempted to evaluate the economic consequences of variation in the democratic character of national political regimes. Sirowy and Inkeles conclude that the studies they considered present a very mixed and confusing picture with regard to the effect of democracy on economic growth.<sup>2</sup>

The relationship between civil and political liberty, on the one hand, and economic growth, on the other, has also been the subject of much discussion. Two conflicting hypotheses have been advanced concerning the connection between economic growth and political freedom. Some economists argue that freedom fosters economic performance and hence economic growth; others pose that high growth rates require economic controls and reduced freedom. Four recent cross-section studies on economic growth have found evidence that lack of civil and political liberties is negatively correlated with economic growth.<sup>3</sup> All of these studies used R. D. Gastil's measures of civil liberties or political rights.<sup>4</sup> G. W. Scully concludes that, for the

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115 market economies studied over the period 1960–80, the politically open societies that subscribe to political, civil, and economic liberty grow at three times the rate of societies in which these freedoms are restricted. For their group of 47 countries, R. C. Kormendi and P. G. Meguire find that countries in the high civil liberty category experience about 1% greater annual economic growth. Similarly, K. B. Grier and G. Tullock conclude that repressive countries in Africa and the Americas have about a 1.5-percentage-point lower annual growth rate than do other countries included in their study. R. J. Barro's results for a sample of 98 countries also indicate that restricted political rights are associated with lower per capita growth.

Recently, also the issue of political instability and economic growth has been investigated by a number of scholars. Most empirical studies point to political instability as an important hindrance for economic growth, since political instability reduces the supply of both capital and labor. Investment is discouraged due to the increased risk of capital loss, and political turmoil causes capital flight and brain drain. Political unrest also hampers the establishment of property rights, which are necessary in order to realize productivity gains associated with impersonal exchange.

In his cross-section model for 98 countries for 1960–85 Barro included two variables to measure political instability: the number of revolutions and coups per year and the number, per million population, of political assassinations per year.<sup>5</sup> He interprets these variables as adverse influences on property rights and finds that both variables exert a significant negative influence on economic growth. A. K. Fosu examined the importance of political instability from 1960 to 1986 for 31 sub-Saharan African countries. He also concludes that political instability has, on average, a deleterious impact on economic growth.<sup>6</sup>

It is very surprising that most studies reviewed so far do not differentiate between different groups of countries. The first purpose of this article is to examine whether empirical relationships between political instability and political freedom—as measured globally by most other researchers—are also valid for smaller geographic areas. The second purpose is to analyze whether results of previous estimates are sensitive with respect to the definition of measures for political instability and freedom. We examine a sample of 97 countries from 1963 to 1988 to determine whether lack of political stability and lack of political freedom are negatively correlated with economic growth. We find some evidence that lack of political stability affects economic growth in Africa. However, this finding is not robust, since other measures of political instability alter this outcome quite dramatically. There is some evidence that in Latin America political repression is negatively correlated with economic development. However, we show that this conclu-

sion is highly dependent on the way the political repression variable is constructed.

Kormendi and Meguire argue that political repression affects economic growth mainly through the investment-income ratio (IIR). The third purpose of this article is to extend their line of research by examining the relationship between political stability and political freedom and the IIR. We find that in Africa and Asia our indicators for political instability are negatively related to the IIR. There is some mixed evidence that in Latin America political repression may hamper capital formation.

The article is organized as follows. Section II discusses the model and our data. Section III presents estimation results concerning the relationship between political instability and economic growth. Section IV contains our findings with respect to the impact of political freedom. In this section we also address Barro's finding that when political instability and political freedom are simultaneously introduced into a growth regression, the civil liberties measure loses its significance. Finally, Section V summarizes the article and presents suggestions for future research.

## II. Our Model and the Data

We have estimated variants of the following cross-section equation:<sup>7</sup>

$$Q = a_0 + a_1 L + a_2 K + a_3 P + v, \quad (1)$$

where  $Q$ ,  $L$ , and  $K$  are the average growth rates of real GDP, population, and capital, respectively, and  $P$  is a measure of political instability or lack of political freedom and  $v$  is the error term. The coefficients  $a_1$  and  $a_2$  are expected to be positive, while most previous research would suggest that  $a_3$  will prove to be negative.

For the period 1963–88 we have constructed a data set for 97 countries. This sample excludes the major oil-exporting countries. These countries tend to have a high level of per capita GDP, which is, however, primarily caused by large amounts of income from selling off natural resources. The mean annual growth rate of real GDP was taken from the 1990 and 1991 issues of the International Monetary Fund's *International Financial Statistics (IFS) Yearbook*.<sup>8</sup> Data on the growth rate of capital, following Fosu, measured as mean gross domestic investment as a percentage of GDP, is taken from R. Summers and A. Heston's data set.<sup>9</sup> Data on population growth are also derived from this source.

Our measure of political instability (TRNS) is based on the total number of government changes. This variable is assigned a value of one if the number of government transfers exceeds seven (the median

number of transfers for the countries in our sample) and zero otherwise. In contrast to most other studies employing government transfers as indicator for political instability—see, e.g., S. Edwards and G. Tabellini—we do not use the total number of government transfers as such.<sup>10</sup> We have also experimented with other measures of political instability, taking six government transfers (the average for Africa) and eight transfers (the average for Latin America) as alternative cutoff points. Data on government transfers are taken from C. L. Taylor and D. Jodice for the period 1963–77.<sup>11</sup> For 1978–88 we constructed our instability measures on the basis of various issues of A. S. Banks's *Political Handbook of the World*.<sup>12</sup>

Gastil has constructed two measures of freedom: civil liberty and political liberty. The civil rights rankings purport to measure the rights of the individual (e.g., independence of the judiciary and freedom of the press). The political rights rankings are based on the degree to which individuals in a state have control over those who govern. This measure is based on issues like freedom of the electoral process, presence of intimidating violence, and the presence of an effective opposition. The index runs from one (most free) to seven (least free). As both measures of freedom are highly correlated, in Section IV we only report the regression outcomes using dummy variables that are based on Gastil's political rights index. The dummy DPRI3 is one if the average of Gastil's political rights index for the period 1973–86 is three or higher and it is zero otherwise. For the dummy DPRI4 the average of four is used as a cutoff point. By using two dummies we are able to investigate the sensitivity of our results for alternative transformations. In Section IV we show that the outcomes are indeed sensitive with respect to the construction of the political rights dummy.<sup>13</sup>

Table 1 summarizes our data. It is interesting to note that the variance of our political instability measure is very similar for the various groups of countries that we examine. Except perhaps for Africa, this also holds true for our measures of political freedom. The lower part of table 1 shows the partial correlation between our measures for political instability and political freedom. It follows that this correlation is quite low.

### **III. Political Instability and Economic Growth**

Before estimating the model, we first have to deal with a problem that was identified by Kormendi and Meguire.<sup>14</sup> They argue that if the political-institutional variable affects economic development solely through the investment ratio, inclusion of capital growth should remove its effect. Therefore, we followed Kormendi and Meguire by excluding investment in estimating the model. As suggested by these authors, we also estimated simple models for the IIR.

TABLE 1  
SUMMARY MEASURES OF DEPENDENT AND INDEPENDENT VARIABLES

	<i>Q</i>	<i>K</i>	<i>L</i>	POLITICAL	POLITICAL	
				STABILITY	FREEDOM	
				TRNS	DPRI3	DPRI4
Average:						
World (97)	4.0	18.3	2.1	.52	.54	.47
Africa (37)	3.9	13.2	2.8	.30	.84	.76
Latin America (23)	3.7	16.6	2.3	.52	.56	.43
Asia (22)	6.2	20.6	3.0	.59	.68	.68
Standard deviation:						
World	1.9	8.8	1.0	.50	.50	.50
Africa	2.2	8.4	.5	.46	.37	.43
Latin America	1.6	5.6	.8	.51	.51	.51
Asia	3.7	9.5	1.3	.50	.48	.48
				DPRI3 and TRNS	DPRI4 and TRNS	
Partial correlation between political instability and political freedom:						
World				-.24	-.24	
Africa				-.03	-.04	
Latin America				.21	.14	
Asia				-.17	-.17	

NOTE.—The number of countries is shown in parentheses. *Q*, *K*, and *L* are the growth rate of real GDP, capital (measured as investment as a percentage of GDP), and population, respectively. The measure of political instability, TRNS, is 1 if the number of government transfers exceeds 7 and is 0 otherwise. The measure of political freedom, DPRI3, is 1 in case the average of Gastil's political rights index for the period 1973–86 is 3 or higher and is 0 otherwise. For the dummy DPRI4, the average of 4 is used as a cutoff point.

The IIR estimation results are reported in the second part of this section.

Row 1a of table 2 presents the estimation results of equation (1) for our total sample of 97 countries, using TRNS as a measure of political instability. The standard errors for the coefficients are based on H. White's heteroscedasticity-consistent covariance matrix.<sup>15</sup> Most coefficients are significant at the 10% level or more. The coefficient of the political instability variable is negative, but not very significantly so. Excluding investment increases its significance only slightly (row 1b).

We also estimated the model for three different continents: Africa, Latin America, and Asia. In Africa political instability appears as a very important factor in determining economic growth (rows 2a and 2b of table 2). Fosu also found for his sample of 31 sub-Saharan African

TABLE 2  
REGRESSION RESULTS: POLITICAL INSTABILITY AND ECONOMIC GROWTH, 1963–88

Regression	Constant	<i>K</i>	<i>L</i>	TRNS	<i>R</i> <sup>2</sup> (Adjusted)	SEE
All countries:						
(1a)	2.13* (.88)	.07* (.03)	.45** (.24)	-.55 (.36)	.09	1.79
(1b)	3.92* (.48)	. . .	.18 (.17)	-.65 (.39)	.03	1.85
Africa:						
(2a)	.77 (1.45)	.08 (.05)	.90* (.44)	-1.33* (.52)	.23	1.96
(2b)	1.09 (1.49)	. . .	1.20* (.58)	-1.77* (.64)	.18	2.02
Latin America:						
(3a)	1.30 (1.60)	.03 (.06)	.93** (.50)	-.34 (.61)	.10	1.53
(3b)	1.85 (1.33)	. . .	.92** (.49)	-.44 (.63)	.14	1.50
Asia:						
(4a)	5.56 (3.93)	.06 (.12)	.13 (1.00)	-1.72 (2.14)	-.04	3.73
(4b)	7.07* (2.58)	. . .	.14 (1.00)	-2.22 (1.75)	-.01	3.68

NOTE.—The model estimated is eq. (1), where our measure of political instability (TRNS) is based on the number of government transfers; this variable is 1 if the number of government transfers exceeds 7 and is 0 otherwise. See Sec. II for a description of the other variables used. Standard errors of the regression (SEE) are shown in parentheses.

\* Significant at the .05 level (one-tailed).

\*\* Significant at the .10 level (one-tailed).

countries over the period 1960–86 that political instability severely hampered economic growth. However, if alternative measures of political instability are used, the results change significantly. For instance, using TRNS6—this variable is assigned a value of one, if the number of government transfers exceeds six (the average number of government transfers in Africa) and zero otherwise—yields

$$Q = 0.42 + 0.09K + 0.91L - 0.51 \text{ TRNS6} \quad (2)$$

(1.50) (0.05) (0.48) (0.50)

$$R^2 = 0.37 \quad \text{SEE} = 1.28.$$

In Latin America the coefficient of TRNS is not significant (row 3a of table 2). This result hardly changes when investment is excluded (row 3b). In Asia the coefficient of our political instability measure is also not significantly different from zero (row 4a).<sup>16</sup> Note, however, that when investment is excluded, the significance of the coefficient for TRNS increases, suggesting that political instability may after all affect



growth through its impact on the investment-income ratio. These findings are not altered if other measures of political instability are used.

In conclusion, we find some support for the view that political instability directly hampers economic growth in Africa but not in Latin America and Asia. Our results, therefore, suggest that the empirical relationship between economic performance and political instability that is generally measured at a global level may be valid only for smaller geographic areas. Furthermore, the results are sensitive with respect to the definition of the political instability measure.

Kormendi and Meguire have found a strong correlation between the level of the investment-income ratio and their political-institutional variable. We take up this line of research by estimating simple models of the IIR. Following Kormendi and Meguire, we estimate a model for the IIR, in which our proxy for political instability is the only explanatory variable. Table 3 presents the estimation results. The outcomes are consistent with those reported in table 2. It follows from table 3 that in Africa and Asia political instability is negatively related to the IIR. These conclusions are not sensitive with respect to the definition of the political instability measure. Using alternative cutoff points in the definition of the political stability measures does not change our conclusions. Our findings imply that in Africa and Asia political instability may affect economic growth in indirect ways.

**IV. Political Freedom and Economic Growth**

The first row of table 4 presents the estimation results for our total sample of 97 countries, using DPRI3 to differentiate countries on the basis of political freedom.<sup>17</sup> Although the coefficient of DPRI3 is negative, it is not significantly different from zero. Kormendi and Meguire found in their regression for a sample of 47 countries a (marginally significant) negative coefficient of Gastil’s civil liberty index. How-

TABLE 3

REGRESSION RESULTS: POLITICAL INSTABILITY AND THE IIR, 1963–88

Regression	Constant	TRNS	R <sup>2</sup> (Adjusted)	SEE
(1) All countries	18.30* (1.31)	.00 (1.80)	– .01	8.87
(2) Africa	14.85* (1.57)	– 5.99* (2.17)	.09	7.67
(3) Latin America	18.38* (1.48)	– 3.47 (2.26)	.06	5.46
(4) Asia	25.32* (3.65)	– 8.82* (4.13)	.17	8.88

NOTE.—The model estimated is  $IIR = a_1 + a_2 TRNS + e$ . Standard errors of the regression (SEE) are shown in parentheses. \* Significant at the .05 level (one-tailed).

TABLE 4  
REGRESSION RESULTS: POLITICAL FREEDOM AND ECONOMIC GROWTH, 1963-88

Regression	Constant	K	L	DPRI3	R <sup>2</sup> (Adjusted)	SEE
All countries:						
(1a)	1.77* (.87)	.06* (.03)	.64* (.28)	-.55 (.54)	.09	1.79
(1b)	3.43* (.34)		.46 (.26)	-.77 (.56)	.03	1.85
Africa:						
(2a)	1.19 (1.32)	.10* (.05)	.91* (.47)	-1.40 (1.13)	.21	1.98
(2b)	1.31 (1.38)		1.35* (.58)	-1.39 (1.29)	.09	2.13
Latin America:						
(3a)	1.94 (1.78)	.02 (.06)	.88** (.46)	-.92 (.71)	.18	1.46
(3b)	2.27 (1.28)		.87** (.44)	-.96 (.61)	.22	1.43
Asia:						
(4a)	3.97 (3.39)	.08 (.11)	-.41 (.99)	2.68** (1.37)	.02	3.63
(4b)	5.58* (2.24)		-.48 (1.00)	2.99* (1.27)	.03	3.61

NOTE.—The model estimated is eq. (1), using DPRI3 as measure of political freedom. Standard errors of the regression (SEE) are shown in parentheses.

\* Significant at the .05 level (one-tailed).

\*\* Significant at the .10 level (one-tailed).

ever, their results were highly dependent on the exclusion of the investment-income ratio, suggesting that the effect of civil liberty on growth operates through the investment channel. Indeed, when investment is left out, both the coefficient of DPRI3 and its significance increase, although the coefficient remains insignificant (row 1b). This suggests that political repression may affect economic growth through its influence on capital formation. Below we present some further evidence that supports this hypothesis.

Rows 2-4 of table 4 show the results for Africa, Latin America, and Asia, respectively. It follows that in sharp contrast to the results for our total sample, the coefficient of DPRI3 is nowhere negative and significantly different from zero if investment is included. When investment is excluded, the magnitude and significance of DPRI3 hardly change. Note, however, that in Asia the coefficient of DPRI3 is positive and significantly different from zero.

Table 5 reports the estimated IIR model if, following Kormendi and Meguire, the only explanatory variables are a constant and DPRI3. The results are quite consistent with those in table 4. Only for our total sample is there evidence that the IIR is negatively related to our proxy for political freedom.

TABLE 5

REGRESSION RESULTS: POLITICAL FREEDOM AND THE IIR, 1963-88

Regression	Constant	DPRI3	R <sup>2</sup> (Adjusted)	SEE
(1) All countries	21.97* (1.07)	-6.85* (1.64)	.14	8.17
(2) Africa	12.87* (2.91)	.39 (3.24)	-.03	8.14
(3) Latin America	18.13* (.97)	-2.75 (2.15)	.02	5.57
(4) Asia	18.64* (3.45)	1.88 (4.30)	-.04	9.92

NOTE.—The model estimated is  $IIR = a_1 + a_2 DPRI3 + e$ . Standard errors of the regression (SEE) are shown in parentheses. \* Significant at the .05 level (one-tailed).

To examine whether our findings are sensitive with respect to the construction of our political freedom dummy, we reestimated all equations in tables 4 and 5, using a dummy (DPRI4) based on four (at Gastil's index) instead of three as the cutoff point. This generally yielded the same outcomes (not shown). However, for Latin America the results changed dramatically. The growth equation becomes

$$Q = 3.45 - 0.03K + 0.64L - 1.76 DPRI4$$

(1.48) (0.03) (0.42) (0.60)

$$R^2 = 0.37 \quad SEE = 1.28.$$

(3)

Finally, we reestimated all equations in tables 4 and 5 and included the measures for instability and civil liberties simultaneously. Barro found that in that case civil liberties lose their significance in the growth regression. For our total sample of countries our equations are

$$Q = 2.38 + 0.06K + 0.60L - 0.66 TRNS - 0.69 DPRI3$$

(0.85) (0.03) (0.27) (0.36) (0.53)

$$R^2 = 0.11 \quad SEE = 1.77$$

(4)

and

$$IIR = 23.09 - 1.74 TRNS - 7.27* DPRI3$$

(1.49) (1.62) (1.58)

$$R^2 = 0.14 \quad SEE = 8.17.$$

(5)

The coefficient and significance of DPRI3 are very similar to those reported in tables 4 and 5, respectively. Indeed, in the growth and

IIR equations for the other country groups, the significance of DPRI3 remained the same as reported in tables 4 and 5 (not shown here; available from us on request). Thus, simultaneously including political stability and political freedom measures does not change our conclusions.

In conclusion, we find little support for the view that political repression negatively affects economic growth in our regional groups. Only in Latin America is there some evidence that political repression hampers economic growth, but this conclusion is very sensitive with respect to the construction of the political repression variable. In Asia political repression is positively associated with economic growth. Again, there are marked differences in the results for the entire sample of countries and those for various smaller geographic areas.

### **V. Summary and Suggestions for Future Research**

This article has three purposes: first, to examine whether the empirical relationship between political instability and political freedom and economic growth, generally measured with global data, also holds for smaller geographic areas; second, to analyze whether estimation results are sensitive with respect to the delineation of measures for political instability and freedom; and third, to investigate the relationship between political stability and political freedom and capital formation in order to determine whether the political-institutional variable affects economic development through the investment ratio.

Using data for a sample of 97 countries for the period 1963–88 we examined whether lack of political stability and lack of political freedom are negatively correlated with economic growth. We estimated a cross-section model based on a simple neoclassical production function. Our measures of political instability are based on the total number of government changes. Two dummies based on Gastil's political rights index are used to measure political freedom. A first conclusion is that results for various regional groups of countries are often very different. We find that only in Africa is there mixed support for the view that political instability reduces economic growth, both directly and through its effect on capital growth. However, the results in the growth equation for Africa are rather sensitive with respect to the definition of the political instability measure. In Asia there is evidence that political instability hampers investment. There is also some mixed evidence that political repression reduces economic growth in Latin America; this result, however, is highly dependent on the construction of the political repression variable. Political repression and growth are positively associated in Asia.

An important issue that is not addressed in this article is causality. Following recent literature, we have based our estimates on the presumption that political instability and repression may hamper eco-

conomic growth. However, the causality may be the other way round; that is, the record of economic growth may affect political stability. Mancur Olson, for instance, argues that

Rapid economic growth, whatever the nature of the economic system, must involve fast and deep changes in the ways that things are done, in the places that things are done, and in the distribution of power and prestige. Most people spend such a large proportion of their time working for a living and draw such a large part of their social status and political influence from their economic position that changes in the economic order must have great effects on other facets of life. . . . Therefore, until further research is done, the presumption must be that rapid economic growth, far from being the source of domestic tranquillity that it is sometimes supposed to be, is rather a disruptive and destabilizing force that leads to political instability.<sup>18</sup>

It is clear that the results reported here do not support Olson's view, since if there is any significant correlation at all, it is between low growth rates and political instability. However, it is possible that a disappointing growth performance leads to political instability. In future research this issue should be addressed.

In this article we have used a very simple growth model to examine the impact of political instability and lack of freedom on economic growth. Further research is needed in which more elaborate growth and investment models are used to examine the robustness of our findings.

## Notes

\* We would like to thank C. A. de Kam and the editor and two referees of this journal for their helpful comments on a previous version of this article.

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2. Larry Sirowy and Alex Inkeles, "The Effects of Democracy on Economic Growth and Inequality: A Review," *Studies in Comparative International Development* 25, no. 1 (Spring 1990): 126–57.

3. Gerald W. Scully, "The Institutional Framework and Economic Development," *Journal of Political Economy* 96 (October 1988): 652–62; Roger C. Kormendi and Philip G. Meguire, "Macroeconomic Determinants of Growth: Cross-Country Evidence," *Journal of Monetary Economics* 16, no. 2 (September 1985): 141–63; Kevin B. Grier and Gordon Tullock, "An Empirical Analysis of Cross-National Economic Growth, 1951–80," *Journal of Monetary Economics* 24 (August 1989): 259–76; and Robert J. Barro, "A Cross-Country Study of Growth, Saving and Government," Working Paper no. 2855 (National Bureau of Economic Research, Cambridge, Mass., February 1989).

4. Raymond D. Gastil, *Freedom in the World* (Oxford: Clío), various vols. See Sec. II for a discussion of these data.

5. Barro, pp. 21–22.

6. Augustin Kwasi Fosu, "Political Instability and Economic Growth:

Evidence from Sub-Saharan Africa," *Economic Development and Cultural Change* 40 (July 1992): 829–41.

7. This model is very similar to the one used by Fosu, who also included exports as an explanatory variable. However, the inclusion of exports in an aggregate production function may be questioned. We are not aware of any sound theoretical justification for this approach and therefore have not included exports in our model. As suggested by one of the referees, we have also estimated the model by using the growth rate of investment minus the growth rate of the population, to take account of the correlation of the right-hand-side variables. This did not, however, affect our general conclusions.

8. International Monetary Fund, *International Financial Statistics Yearbook* (Washington, D.C.: IMF, 1990 and 1991), vols. 43 and 44.

9. R. Summers and A. Heston, "The Penn World Table (Mark 5): An Expanded Set of International Comparisons, 1950–1988," *Quarterly Journal of Economics* 106 (May 1991): 327–68.

10. Sebastian Edwards and Guido Tabellini, "Explaining Fiscal Policies and Inflation in Developing Countries," *Journal of International Money and Finance* 10, suppl. (1991): S16–S48. We have also constructed a similar dichotomous variable based on the number of irregular government transfers (coups). Since this variable generally yielded the same outcomes, we do not report them here.

11. C. L. Taylor and D. Jodice, *World Handbook of Social and Political Indicators* (New Haven, Conn.: Yale University Press, 1983).

12. Arthur S. Banks, *Political Handbook of the World* (New York: McGraw-Hill), various issues.

13. We have also experimented using an average of five as a cutoff point, but this yielded similar results as for the models with PRI4.

14. Kormendi and Meguire (n. 3 above), p. 46.

15. H. White, "A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity," *Econometrica* 48 (May 1980): 817–38.

16. Note the very poor fit of the regression for Asia. Apparently the model is not able to capture the highly diverging development patterns in Asia. We have tried various country-dummies to improve the fit, but this did not change our basic conclusion with respect to the significance of the coefficient of TRNS.

17. See Sec. II for further details on the construction of this dummy.

18. Mancur Olson, "Rapid Economic Growth as a Destabilizing Force," *Journal of Economic History* 23 (1963): 519–52, quote on 550.