DEMOCRACY AND GROWTH: A RELATIONSHIP REVISITED

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INTRODUCTION

The potential effects of political regimes on economic growth have been intensely analyzed. Starting with the work by Adelman and Morris [1967], economists have concurred that the standard of living in a society is a direct result of the dynamic interdependence of economic, political, and social forces. They admit the importance of valid political structures and social cohesion for good economic health, in addition to sound macroeconomic policies. However, several issues cause this accord to sink into disagreement. The following are among the questions at the core of the debate: Is the nature of political regimes (regime type) a significant determinant of economic performance? In other words, does it matter whether the regime is democratic or authoritarian? Or would sociopolitical stability, in fact, be what really counts?

Two broadly opposing views fail to reach a consensus on the authoritative answers to these questions.[1] Advocates of democracy regard political liberties to be necessary to achieve sustained and equitable growth. In their view, democratic features such as political pluralism, the system of institutional checks and balances, and the periodic renewal of policymakers through elections protect the economic system against abusive or predatory behaviors typical of most authoritarian regimes. The democratic process is viewed as more suitable to economic prosperity because it can better nurture civil liberties and secure property and contract rights. Consequently, it provides agents with incentives to undertake investments and to seek to maximize welfare. Democracy makes it possible for individuals to examine opportunity costs freely, to engage in the entrepreneurial initiatives of their choice, and to benefit fully from the fruits of their labor.

In opposition to that perspective is the proposition that democratic regimes hamper growth because of their short-term focus. According to adherents to that view, elected officials tend to be shortsighted because they long for popular approval and success in the next election, making them exceedingly receptive to all sorts of pressure, and inclined to yield to calls for immediate consumption. Krueger [1974] argues that actions by private pressure groups and lobbying can affect people's perception of the economic game. The market mechanism is held in suspicion, and resource allocation is considered to be the result of a lottery where lucky (successful) rent-seekers

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become rich while the poor are unlucky players excluded from the benefit of rent seeking. The democratic process is therefore regarded as typically incapable of pursuing policies needed to unleash the forces of economic growth because such policies may limit political and civil liberties, which precisely defeats the democratic purpose. This reduces investment and makes it difficult to achieve sustained growth. Hence the process is a fundamental weakness of democratic regimes that, as suggested by their critics, causes their economies to perform more poorly than authoritarian regimes. The latter, on the contrary, are insulated from the constraints of redistributive politics and have enough elbowroom to enact optimal policies aimed at achieving long-term growth. Also, as residual claimants to their countries' national wealth, autocrat policymakers (dictators) have an "encompassing interest" in furthering growth through the provision of domestic tranquility and other public goods that increase productivity and output and, as a result, their share of national income [Olson, 1982; McGuire and Olson, 1996].

Democracy advocates reject this line of argument. They do not consider the somewhat rare experience of higher rates of growth under the authoritarian rule to be an indication of any superiority over the democratic rule. For them, economic success under autocracy is incapable of withstanding the test of sustainability because it occurs in an inequitable environment, laden with repressed discontent. Frustrations build up, gradually undermine the apparent sturdiness of the macroeconomy and, ultimately, burst into flames of sociopolitical instability. This hampers long-run growth. This outcome is avoidable only if, after the country has come through the early stages of economic development, the polity manages to implement a transition toward democracy, like in South Korea and Taiwan. Democracy advocates also point to the damages predatory or incompetent (anarchistic) authoritarian regimes have inflicted on their countries historically. This holds true even for the rational (but self-interested) autocratic ruler who has eliminated anarchy and provides a peaceful order and other basic public goods to tax-generating subjects to give them an incentive to keep generating taxable income. The promises of these autocrats to foster long-run economic performance are not absolutely credible because their planning horizon is not indefinitely long. In extreme cases, an otherwise rational ruler who is led at a certain point in time to fear for his regime's longevity might end up behaving like a predatory bandit (confiscation of private property, abrogation of contracts, etc.), with no concern for the economic repercussions of his acts [Olson, 1993]. At the limit, the fact that within the class of nondemocratic regimes, the poorly performing ones customarily wreak havoc on their economies while substantially outnumbering the few highly performing ones (such as most East Asian Tigers two decades ago), does little to help the case of authoritarianism.

In retrospect, one distinguishing feature of the empirical literature on growth and democracy is its lack of certainty with regard to the nature of the relationship. In that respect, besides the two broad perspectives presented earlier in this study, there is also a third viewpoint that casts doubt on the very existence of any relationship between regime type and economic growth. What really matters, according to this approach, is the effectiveness of policies implemented and the stability, rather than type, of the regime. Theoretically, political instability creates uncertainty about the

future orientation of governance and renders economic agents reluctant to engage in projects that they have come to perceive as exceptionally risky. This causes private resources in the economy (both physical and human capital) to expatriate and relocate in less erratic environments, which hinders investment and growth.

The sources of the divergence still merit thorough investigation. This study revisits the issue in the context of the 1970s and 1980s.[2] It introduces the concept of *initial democratic capital*, and argues that several other factors, besides the type of the political regime *per se*, contribute to the influence of the political economy on growth. Among those factors, the nonlinearity of the growth/regime-type relationship, the stability of the political regime, and the presence of an initial democratic capital seem crucial. The findings show that the explanatory power of the neoclassical growth model adopted in this study is strengthened with the addition of proxies for regime type, regime stability, the initial level of political rights, initial democratic capital, the level of economic freedom, the stock of human capital, and country location (that is, the various regions of the world where the 82 countries retained in the sample are located[3]). The robustness of the relationships under study is also analyzed.

THEORETICAL FRAMEWORK

This paper implements a comprehensive approach to the analysis of the interplay between regime type and economic growth. In addition to the types of political regimes prevailing in the period of study itself, the political legacy from previous years is also accounted for. The basic hypothesis is that regime type, whether democratic or autocratic, is likely the result of a relatively prolonged institutionalization process whereby the underlying structural arrangements become stabilized and effective [Huntington, 1968]. Consequently, contrary to most studies, it is posited here that the conceptualization of the regime-type/economic-growth relationship should go beyond the assessment of the average level of democracy (or autocracy) over the period studied. It is important to detect accurately any political legacy a country might have inherited from earlier periods. I refer to this historical background as the *initial democratic capital*.

Relevance of Initial Democratic Capital

This study is not the first to espouse the idea of accounting for political tradition, although, as will be seen, the conceptualization and measurement of the political tradition adopted here is different from previous research and is new to this literature. Other studies have looked at variables such as a nation's colonial heritage to determine the impact of the latter on the status of political freedom. Lipset et al. [1993] finds countries that were British colonies to be more likely to have democracy through the 1970s than countries formerly ruled by other colonial powers. But the relationships are not significant for the 1980s. Barro [1996] argues that the former possessions of Britain and Spain are substantially more democratic than are those of France, Portugal, or other countries. However, he concludes that the breakdown among different colonizers is irrelevant and colonial history is insignificant for democracy

when measures of the standard of living (such as schooling and infant mortality) are held constant.

Using the colonial experience as an indicator of a nation's political tradition has some intrinsic conceptual problems. Due to fierce competition among colonial powers, a number of nations have experienced a succession of colonial administrations over time. The fact that a competitor would prevail, usually after throwing its rivals out of a disputed territory, does not necessarily imply that the losers left behind no impact. Therefore, it might not be appropriate to attribute the entirety of a nation's political heritage before independence to the one predominant colonial ruler. Moreover, colonial legacy varies widely across countries both in its attributes and its persistence. Nations have been freed at different points over a fairly long span of time, from late in the eighteenth century (the United States became independent in 1776) to very late in the twentieth century (the former soviet republics became independent in the 1990s). Differentiation on the basis of the length of the self-governance period seems warranted when evaluating the impact of colonization on political freedom. This impact is likely to fade as the period of self-governance extends over time. This may help explain why, as reported earlier, Lipset et al. [1993] found colonial influence to be significant in the 1970s but not in the 1980s. Another important point may be the permeability of the ruler/ruled relationship (that is, the extent to which a colonizing power cared to instill useful skills into those it colonized). It is possible that the former British colonies were found to have benefited somewhat from their exposure to the British democratic principles because they were administered in a way that allowed them to learn and later take the first steps toward democracy. Or, alternatively, the British may have left their colonies with a significant endowment of administrative capacity, making it possible for the new nations to organize and operate in a cadre more hospitable to democratic principles.[4]

This study develops the concept of initial democratic capital to represent more accurately the impact of the political tradition of a nation on economic performance. The starting point of this approach is its account of a country's legacy of political freedom inherited from the years immediately prior to the sample period (that is, the years preceding the 1970s up to the two or three previous decades). These may have been years of colonial rule, for example in the case of African countries that became independent in the 1960s, or they may have been years of self-governance in the case of countries that were emancipated relatively long before or have always been independent. Therefore, the focus of inquiry is redirected away from the exclusive consideration of the colonial heritage, and toward the representation of a nation's "own" political background, regardless of its source, which may or may not stem from colonial legacy. Initial democratic capital is intended to capture the many instances when a nation has been independent long enough to build its own (post-colonial) political tradition.

Initial democratic capital is measured as the level of democracy in the sample period's first year. As an indicator of a country's distinctive initial democratic endowment, initial democratic capital is denoted either high (for a country that had democracy in 1972) or low (for a country that was autocratic at that time). Political freedom in a country that was a democracy at the start of the sample period is assumed to

have been improving more or less steadily in the recent past. On the contrary, a country that was autocratic in 1972 is likely to have failed to implement a democratic tradition in the run-up to the period studied. The former is thus assumed to have started the sample period with a high level of initial democratic capital, and the latter with a low level of initial democratic capital. The higher the starting level of political rights (or the higher the initial democratic capital), the stronger the democratic tradition accumulated in earlier years, the more favorable democracy is likely to be for growth in the sample years (1972-1989).[5] With this in mind, this analysis assumes that cross-country differentials in growth rates may also be explained by early differences in democratic capital. This idea is similar to the neoclassical assumption of an impact of early levels of national income on subsequent levels of national income, which is the basis of the conditional convergence theory [Barro and Sala-í-Martin, 1995].

In addition to the types of political regime prevailing in the sample period and to countries' initial democratic capital, the following are accounted for as growth-impacting factors:

- Nonlinearity of the regime-type/economic-growth relationship. Previous research found that the type of political regime might have a different effect on growth depending on the stage of economic development. Building on prior separate studies by Jackman, O'Donnell, and Kurth, Lipset [1993] postulates that the relationship is curvilinear (an *N*-shaped curve), which suggests the existence of an upper threshold of economic development beyond which the chances for more democracy are quite low. Other studies found that at low levels of political rights, an expansion of rights stimulates growth; however, further expansion of political rights toward the highest levels of democracy causes a relative erosion of the growth potential [Barro, 1996; Comeau, 1997]. Arguably, enhanced political liberties trigger enhanced pressures to satisfy social and welfare demands and to redistribute national income, which would be detrimental to productive investments;
- Stability of the political regime. Among the determinants of economic growth, the stability of the political regime may be as important as its type. Consequently, a complete representation of the workings of the sociopolitical framework may require, in addition to the regime-type proxy, a measure for sociopolitical instability as a complementary explanatory variable in the model.

The Model

The following production function is used:

$$y_t = A_t \, \mathrm{f}(k_t) \tag{1}$$

where y is output per capita, k is capital stock per capita, f is a neoclassical production function exhibiting positive and diminishing marginal returns [Barro and Sala-í-Martin, 1995], and A_t is an overall productivity factor. Assuming that y_0 is the initial level of income, n is population growth rate, and s is investment in physical capital (saving rate), the rate of growth of y can be formulated as

$$\dot{y}/y = g(y_0, n, s, A) \tag{2}$$

with partial derivatives $g_1<0$, $g_2<0$, $g_3>0$, $g_4>0$ [Mankiw et al., 1992]. A caveat is in order. The overall productivity factor is usually assumed to produce positive marginal returns for growth inasmuch as it captures the impact of technology. However, for the purpose of this study it also captures the effects of sociopolitical factors that might either favor or reduce growth. Specifically:

$$A = A(\text{regime type, regime stability, initial level of political rights, initial democratic capital, human capital, economic freedom}) \tag{3}$$

I hypothesize that all partial derivatives are positive, provided that regime type is democratic. This extended version of the neoclassical growth model assumes that the neoclassical variables (y_0, n, s, A) augmented with sociopolitical factors determine the rate of growth of the economy in the process of convergence toward the steady-state level of income.

Methodology of Estimation

The existing evidence is disparate enough to warrant legitimate concerns about the robustness of findings regarding the interaction between the political economy and economic growth. More generally, serious doubts have been expressed with respect to the validity of an entire class of studies that have drawn more or less definite conclusions about the mechanisms of long-run growth on the basis of empirical linkages obtained through cross-country regressions. An extensive literature has come up with over 50 theoretically acceptable economic policy, political, and institutional explanatory variables. However, each study ignores the vast majority of such variables to consider only a very few, if not just one. To say the least, this does not help achieve certainty as to what drives economic growth. As Levine and Renelt [1992] noted, most policy indicators utilized by researchers have a fragile relationship with long-run economic growth. The relationships lack robustness, and specific factors would lose significance in the presence of small alterations in other factors. They propose the use of a variant of Leamer's [1983] extreme-bounds analysis to assess the robustness of results obtained from cross-section analyses. This study's methodology for estimation of the model follows from their approach.

The empirical counterpart of the extended neoclassical model (equation 2) is as follows:

$$\dot{y}/y = \beta_1\mathbf{N} + \beta_2\mathbf{P} + \beta_3\mathbf{Z} + u \tag{4}$$

where **N** is a vector comprised of a subset of variables that are generally included in growth regressions because they are theoretically important for growth: for the purpose of this paper, such variables are the basic neoclassical regressors (y_0, n, s); **P** is a vector including the subset of variables of interest: the proxies for regime type, sociopolitical stability, initial level of political rights, and initial democratic capital; **Z**

is a vector of variables that have, according to the literature, displayed a significant relationship with growth: the proxies for economic freedom and human capital, along with a number of regional dummies; and u is an error term.

The empirical analysis is conducted in the form of a sensitivity analysis. Because the *N*-variables are usually accounted for, I focus on examining the effects of the *P*- and *Z*-variables on growth. The coefficients for the neoclassical (**N)** and political (**P**) variables are estimated first (Table 2), followed by estimations where various combinations of the other growth-related (**Z**) variables are added (Table 3). The relationship between the political structure and growth will be considered as robust if, independent of variations in the choice of other growth-related variables included in different versions of the regression, the political variables remain statistically significant while carrying the theoretically expected signs [De Haan and Siermann, 1998]. Moreover, of importance to the analysis is the use of the other variables (**Z-**factors) as instrumental variables to correct for potential endogeneity problems. Although, endogeneity should not be a major problem, particularly as it is typically less severe in cross-sectional regressions with a length of period similar to this paper's [Fischer, 1993]. Nevertheless, in the case of investment, given widely expressed endogeneity concerns in the literature, the empirical analysis will perform a test to that effect. The variables comprised in the three vectors are listed below (see Appendix B for further details and sources).

Neoclassical variables (N). The neoclassical variables include: starting level of real GDP per capita, population growth, and physical capital investment.

Political variables (P). There are five political variables: two representing regime type, two representing the political heritage, and one representing sociopolitical instability. They are constructed from the index of political rights of *The Annual Survey of Political Rights and Civil Liberties* [Gastil and Freedom House, annual since 1972]. I utilize the Gastil scale in its original format with 7 scores labeled from 1 to 7 to convey the level of political freedom of countries, from most democratic (a score of 1) to most autocratic (a score of 7). This methodology is contrary to other studies that have converted the Gastil scale linearly to 0-1. Using the unaltered 1-7 scale makes it easier to intuitively relate this study's implications to any country's political reality, based directly on its Gastil ranking (no need to decipher the corresponding Gastil score of any freedom level expressed in the 0-1 scale).

The five political variables include the proxy for regime type, and its quadratic specification. They comprise also the measure of the extent of political rights at the beginning of the sample period (a measure of initial *political* endowment), and an indicator of initial *democratic* capital. The last political variable is the proxy for sociopolitical instability (which indicates the absence of stability). This proxy is the standard deviation of the Gastil political rights series. It is conceptually different from other proxies proposed in the literature, such as the number of revolutions, attempted coups d'état, political assassinations, and executive turnover [Londregan and Poole, 1990; Barro, 1991; Alesina et al., 1996]. This analysis finds these usual indicators of sociopolitical instability somewhat lacking.[6] Because it is based on the

TABLE 1
Correlation Matrix
(Averages for 1972-1989, except for Initial Income and Initial Democratic Capital[a])

	Growth	Initial Income	Population Growth	Physical Capital Investment	Democracy	Political Instability	Initial Democratic Capital	Economic Freedom	Human Capital Investment (Basic Schooling)
Initial income	0.122	1							
Population growth	−0.328	−0.750	1						
Physical capital investment	0.499	0.638	−0.558	1					
Democracy[b]	0.286	0.764	−0.673	0.591	1				
Political instability	−0.147	−0.394	0.242	−0.256	−0.275	1			
Initial democratic capital	0.215	0.587	−0.530	0.345	0.784	−0.349	1		
Economic freedom	0.361	0.492	−0.359	0.461	0.382	−0.275	0.347	1	
Human capital investment (basic schooling)	0.274	0.852	−0.772	0.698	0.712	−0.313	0.540	0.472	1
Human capital investment (higher schooling)	0.182	0.738	−0.489	0.517	0.571	−0.252	0.417	0.411	0.802

Number of observations: 82.

a. These two variables capture per capita income and the level of democracy, respectively, at the beginning of the sample period (that is, in 1972). In Appendix B and Tables 2 and 3 initial income is labeled *STARTGDP*, and initial democratic capital is labeled *STARTDEMOC*.

b. Democracy is the proxy for regime type (*REGTYPE* in Appendix B and Tables 2 and 3) viewed from the standpoint of its representation of the average degree of democracy of political regimes in the sample period.

In Appendix B and Tables 2 and 3 population growth is *POP*, physical capital investment is *INVEST*, political instability is *INSTABILITY*, economic freedom is *ECONFREE*, basic schooling is *LOWHUMCAP*, and higher schooling is *HIGHHUMCAP*.

variability of the Gastil series, this proxy is more likely than its competitors to reflect the effect of stability-disturbing events that are not as obvious as revolutions or executive turnover. Methodologically, Freedom House's 7-class political rights series is derived to capture the impact on the sociopolitical environment of each nation surveyed of all "real world situations caused by state and nongovernmental factors" [Gastil and Freedom House, 2000, 582]. The availability of seven classes to rank countries (instead of only two or three) allows the survey more flexibility to render nuances in the status of political freedom across nations.[7] Similarly, this flexibility makes it possible for the survey to reflect moderate year-to-year fluctuations in freedom within a nation by allowing a democratic (or autocratic) regime to oscillate between adjacent classes.[8] In the limit, the standard deviation is a valid assessor of this activity that, at higher intensity, is viewed as indicating higher instability.[9]

Other variables (Z). Other variables related to growth include the proxy for economic freedom, and its quadratic specification; proxies for low-level and high-level human capital; and the regional dummies for Sub-Saharan Africa, Latin America and the Caribbean, North Africa and the Middle East, Asia and the Pacific, and North America and Europe.

EMPIRICAL RESULTS

Table 1 provides a description of simple correlations between the main variables. The first column shows the correlations between growth and neoclassical and institutional variables. The outcomes are as expected. Democracy, initial democratic capital, economic freedom, and human capital are positively associated with growth. On the contrary, political instability and population growth are negatively correlated with all the other variables, but are positively correlated with each other. The high positive correlation between democracy and initial democratic capital (0.784) points to the persistence of democracy, and supports the hypothesis that a significant democratic endowment at the start of the sample period is associated with significant levels of political rights in subsequent years. A similarly strong positive correlation exists between democracy and initial income (0.764), and between democracy and basic or low-level human capital (0.712). These strong correlations, which are all statistically significant, provide insight into growth-impacting mechanisms in the model. For instance, democracy correlates positively with physical capital investment (0.591) which itself is positively associated with growth (0.499), suggesting that democracy correlates positively with growth both directly (efficiency effect with correlation at 0.286) and indirectly through investment (accumulation effect with correlation at 0.591).

Impact of Regime Type, Regime Stability, and Initial Democratic Capital

Table 2 presents five linear and quadratic specifications of equation (2). Regression (1) is the basic neoclassical growth regression with initial income, investment in physical capital, and population growth as independent variables. Its results are con-

TABLE 2
Impact of Regime Type, Regime Stability, and Initial Democratic Capital
(Dependent Variable: GDP Growth)

	(1)	(2)	(3)	(4)	(5)
STARTGDP	−1.51[a]	−1.82[a]	−1.74[a]	−1.66[a]	−1.41[a]
	(0.31)	(0.35)	(0.35)	(0.35)	(0.34)
POP	−0.79[a]	−0.69[a]	−0.79[a]	-0.86[a]	−0.92[a]
	(0.22)	(0.20)	(0.22)	(0.22)	(0.22)
INVEST	0.20[a]	0.19[a]	0.18[a]	0.17[a]	0.16[a]
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
REGTYPE	—	−0.26[b]	0.62	1.44[a]	2.06[a]
		(0.13)	(0.41)	(0.66)	(0.64)
Q_REGTYPE	—	—	−0.11[b]	−0.21[a]	−0.29[a]
			(0.05)	(0.08)	(0.07)
INSTABILITY	—	—	—	−0.75[b]	−1.16[a]
				(0.38)	(0.40)
STARTPOL	—	—	—	—	0.55[b]
					(0.24)
STARTDEMOC	—	—	—	—	2.32[a]
					(0.89)
$\bar{R}^2$	0.39	0.41	0.43	0.45	0.48

Variable definitions and sources are presented in Appendix B. Regressions are estimated by ordinary least squares. Significance levels are indicated by a and b, which denote 1 percent and 5 percent levels of significance, respectively. Estimated heteroskedasticity-consistent [White, 1980] standard errors are in parentheses.

sistent with the theory. All three variables are strongly statistically significant. With regard to conditional convergence, initial income is negatively related to growth, as is population growth. Investment in physical capital substantially fosters growth: an increase in the rate of investment by 10 percent of GDP would have caused an increase in average GDP growth by 2 percent. This would have been the performance of countries like Congo, Guatemala, and Sri Lanka (their investment level was around 10 percent of GDP in the 1970s and 1980s) if they had achieved the level of physical capital accumulation of countries like Togo, Brazil, and Indonesia (which invested 20 percent of GDP, approximately).

When added to the standard model, the regime-type indicator variable is statistically significant (regression 2). The negative sign of the coefficient of regime type points to detrimental effects of authoritarianism on the pace of economic activity. A country that went from one Gastil score to the next, while moving away from the democratic end (Gastil's 1) and towards the authoritarian end (Gastil's 7), would reduce its average rate of growth by one-fourth of one percentage point. Inversely, progress in the opposite direction (from 7 toward 1, that is, toward more democracy or less authoritarianism) would favor growth to the same extent, *ceteris paribus*. Presumably, countries like Cameroon, Chile, and Syria (which had an average Gastil score of 6 in the sample period) would have grown by an additional 1 percent, had they fostered political rights to ascend to the freedom status of countries like Botswana,

the Dominican Republic, and India (whose average Gastil score was 2). This result, however, casts doubt on the linearity of the democracy/growth linkage. Moving from a Gastil score of 6 to a Gastil score of 2 (a substantial change in political freedom) would generate only a one percentage point increase in growth rate. Also, this evolution would most likely come with a surge of instability, which would defeat the underlying other things equal assumption. Hence the need of a better specification for the model.

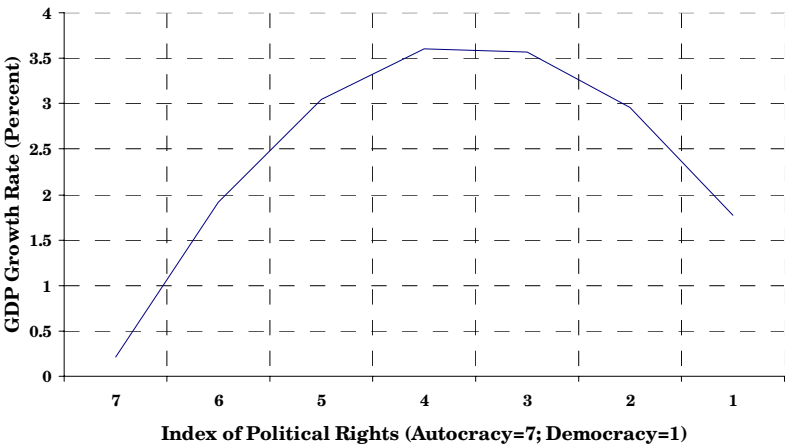
The addition of the quadratic specification of regime type provides evidence that the relationship between growth and regime type in fact may not be linear (regression 3). The political economy is likely to affect economic performance differently, depending on the stage of economic development. Interestingly, in regression (3) regime type loses statistical significance in the presence of its statistically significant quadratic version. This outcome may signal that nonlinearity actually dominates the underlying relationship. The negative sign of the coefficient on the quadratic specification of regime type suggests that regime type gives rise to declining marginal returns for economic growth—more democracy leads to more growth, but at a diminishing rate.

With the inclusion of the indicator of instability (regression 4), the explanatory power of the model and the statistical significance of the two regime-type proxies are strengthened. The presence of sociopolitical instability contributes to stronger effects of regime type on growth, as evidenced by the doubling of the size of the coefficients on regime type and its quadratic form from regression (3) to regression (4). Regression (5) adds initial levels of political rights and democratic capital to the model. The variable for the initial level of political rights captures the extent to which people benefited from political freedom at the start of the sample period (1972), without differentiating between democratic and authoritarian regimes. It is a measure of initial *political* endowment. The variable for initial democratic capital is a binary regressor that splits the sample countries into two groups in 1972—democratic and non-democratic (the latter being the omitted category). The purpose of this variable is to show whether a tradition of democracy helped countries do better economically.

Regression (5) brings the analysis of the impact on growth of components of the political economy to completeness. All political variables (**P**) are now allowed to work together to exert their effects on growth. The findings support the hypothesis that comprehensiveness of specification is necessary to capture appropriately the effect of the sociopolitical context on economic performance. As set forth by this study, the nonlinearity of the growth/regime-type relationship, the stability of the sociopolitical system, and the relative size of the stock of initial democratic capital appear essential. Regression (5)'s outcome is illustrated in Figure 1 which shows an inverted U-curve relationship between growth and regime type. Growth tops out at a level of political rights of about 3 (which was the freedom level of countries like Malaysia and Turkey), and declines when democracy further expands to levels 2 and 1, the highest degrees of political freedom allowed by the Freedom House scale.

The explanatory power of the model is reinforced, with an improvement in adjusted R-square from 39 percent in regression (1) to 48 percent in regression (5). The size of the coefficients of the political variables expands. A worsening impact on the pace of growth due to sociopolitical unrest is evident with the increase in

FIGURE 1
Regime Type and Growth



INSTABILITY's coefficient from −0.75 in regression (4) to −1.16 in regression (5), and with an increase in the confidence level from 5 percent to 1 percent. According to regression (5), a democratic legacy bodes well for economic prosperity: the point estimate of the coefficient on *STARTDEMOC* implies that, compared to their authoritarian counterparts, countries that were democracies in the early 1970s subsequently grew by an additional 2.3 percentage points.

Testing for Robustness

This part of the analysis tests the robustness of the results obtained thus far. Table 3 shows the outcome of further augmenting the model with different combinations of the **Z**-variables.

Economic freedom is shown to foster growth (regression 6), holding all three characteristics of the political economy constant. An improvement in standing by three points within the 1-to-10 economic freedom scale would have caused the average sample country to grow in the period by an additional 1 percent, approximately. This would require that countries like Benin, Jamaica, Colombia, and Pakistan (average economic freedom level of 4) to have been on a par with countries like Belgium, Panama, Singapore, and Malaysia (level 7). Regression (7) adds the quadratic specification of economic freedom, and displays an outcome similar to that of regressions (4) and (5). As in the case of democracy, economic freedom maintains a nonlinear relationship with growth, and gives rise to declining marginal returns for growth—more economic freedom increases the capacity of the economy to expand, but it does so at a diminishing rate.

In regressions (8) to (10), the proxies for low-level human capital and high-level human capital are added first alternately, then simultaneously. Regression (10) proves to be a somewhat better specification. Low-level human capital remains statistically

TABLE 3
Testing for Robustness
Dependent Variable: GDP Growth

	(6)	(7)	(8)	(9)	(10)	(11)	(12)
STARTGDP	−1.47[a]	−1.34[a]	−1.29[a]	−1.51[a]	−1.38[a]	−1.28[a]	−1.38[a]
	(0.31)	(0.33)	(0.36)	(0.34)	(0.35)	(0.34)	(0.40)
POP	−0.92[a]	−0.90[a]	−0.94[a]	−0.93[a]	−1.16[a]	−0.82[a]	−0.88[a]
	(0.22)	(0.22)	(0.22)	(0.21)	(0.26)	(0.20)	(0.25)
INVEST	0.14[a]	0.14[a]	0.14[a]	0.14[a]	0.15[a]	0.11[a]	0.11[a]
	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)
REGTYPE	2.15[a]	2.24[a]	2.24[a]	2.37[a]	2.48[a]	2.13[a]	1.69[a]
	(0.62)	(0.64)	(0.63)	(0.64)	(0.64)	(0.59)	(0.55)
Q_REGTYPE	−0.30[a]	−0.32[a]	−0.32[a]	−0.33[a]	−0.34[a]	−0.30[a]	−0.25[a]
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
INSTABILITY	−1.14[a]	−1.18[a]	−1.19[a]	−1.20[a]	−1.27[a]	−0.75[b]	−0.80[b]
	(0.38)	(0.38)	(0.38)	(0.38)	(0.37)	(0.38)	(0.39)
STARTPOL	0.58[a]	0.60[a]	0.60[a]	0.62[a]	0.62[a]	0.58[a]	0.58[a]
	(0.24)	(0.23)	(0.22)	(0.24)	(0.24)	(0.22)	(0.24)
STARTDEMOC	2.22[a]	2.26[a]	2.26[a]	2.34[a]	2.42[a]	2.39[a]	2.14[a]
	(0.88)	(0.88)	(0.87)	(0.91)	(0.92)	(0.84)	(0.86)
ECONFREE	0.37[a]	1.71[b]	1.71[b]	1.77[b]	1.83[a]	1.93[a]	1.79[a]
	(0.14)	(0.73)	(0.73)	(0.72)	(0.72)	(0.77)	(0.72)
Q_ECONFREE	—	−0.14[c]	−0.14[c]	−0.15[b]	−0.15[b]	−0.16[b]	−0.15[b]
		(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
LOWHUMCAP	—	—	−0.05	-	−0.26	−0.16	−0.12
			(0.10)		(0.13)	(0.11)	(0.10)
HIGHHUMCAP	—	—	—	0.05	0.10[b]	0.06	0.04
				(0.02)	(0.03)	(0.02)	(0.01)
SUB-SAHAFRICA	—	—	—	—	—	−1.00[b]	—
						(0.51)	
LATAMERICA-CARIB	—	—	—	—	—	−1.68[a]	—
						(0.43)	
NTHAFRICA-MIDEAST	—	—	—	—	—	—	1.66[a]
							(0.56)
ASIA-PACIFIC	—	—	—	—	—	—	1.59[a]
							(0.48)
NTHAMERICA-EUROPE	—	—	—	—	—	—	1.09[b]
							(0.50)
$\bar{R}^2$	0.51	0.53	0.52	0.53	0.54	0.62	0.61

Variable definitions and sources are presented in Appendix B. Regressions are estimated by ordinary least squares. Significance levels are indicated by a, b, and c, which denote 1 percent, 5 percent, and 10 percent levels of significance, respectively. Estimated heteroskedasticity-consistent [White, 1980] standard errors are in parentheses. To ensure an easier consultation of the table, two horizontal lines separate the N, P, and Z groups of variables from one another.

insignificant but high-level human capital achieves statistical significance with the expected positive sign. This is evidence of the potentially important relationship that exists between the specific type of human capital and economic growth. The accumulation of low-level human capital does not seem to warrant the development of skills needed to influence growth in significant ways. This is consistent with the statistical record of fairly poor economic performance of countries with a large stock of mostly

low-level human capital. In contrast, countries with a larger stock of high-level human capital (college level and beyond) are shown to have higher rates of growth. Nonetheless, the two variables seem to be mutually reinforcing since high-level human capital achieves statistical significance only when the model includes low-level human capital. This may reflect the fact that basic schooling, although not sufficient in itself to sustain growth, is the foundation upon which higher schooling must rest.

Every additional percentage point of higher schooling attained in the population would have contributed to higher growth by one-tenth of one percentage point. As a result, if countries like Algeria, Senegal, Bangladesh or Haiti (on average, only 1 percent of their population had access to higher schooling) had managed to allocate resources to achieve the level of higher schooling of countries like Denmark, the Philippines or Sweden (at least 11 percent), they would have fostered their average pace of economic expansion by 1 percent. Furthermore, those countries could have grown by another percentage point if they had emulated countries such as Canada, Israel, and New Zealand (21 percent). Indeed, results based on these proxies for human capital should be received with caution. For one thing, they are not particularly robust. Also, one can argue that investment in human capital includes more than formal schooling. Human capital also includes on-the-job training, various skills, knowledge, health characteristics, and habits of the population [Becker, 1994]. In addition, *number of years* of schooling does not reflect the *quality* of schooling that arguably may be more important a catalyst of economic growth. These attributes are not included in the two proxies used in this research.

The remaining regressions of Table 3 control for region-specific effects in the growth model. These regressions regroup the sample countries into two major categories.[10] Regression (11) shows lower growth associated with countries located in the first group (the Sub-Saharan African region, and the Latin American and Caribbean regions). On the contrary, regression (12) suggests that location is beneficial for economic prosperity for countries in the second group (North Africa and the Middle East, Asia and the Pacific, and North America and Europe). Hence the model identifies continent fixed effects in the form of specific growth-impacting features within each group. The literature customarily assumes these features to be related to the effectiveness of region-specific policy making, in addition to factors such as regional endowments of natural resources, regional business cycle fluctuations, cultural attributes, and so on.

A closer look at the results in the last two regressions points to the efficiency of resource allocation (investment in physical capital) and sociopolitical stability as two channels of the impact of the political economy in those continents on growth. The estimated coefficients on investment in physical capital lose more than one-fourth of their magnitude in regressions (11) and (12), compared to regression (10)—from 0.15 in regression (10) to 0.11 in both regressions (11) and (12). At the same time, the coefficient on sociopolitical instability declines by almost half—from -1.3 in regression (10) to -0.8 in both regressions (11) and (12). However, the implications from these results cannot be drawn without pertinent interpretation of the signs of the coefficients on the regional dummies. Such interpretation varies sensibly, depending on which group of countries one controls for. For the first group in regression (11), the

negative regional dummy coefficients point to lower growth (possibly through lower investment and higher instability). For the second group in regression (12), the positive regional dummy coefficients indicate higher growth (possibly through higher investment and lower instability).

The outcome from regressions (11) and (12) suggests a more important role for investment than assumed by the neoclassical growth model. For the latter, investment comes from an exogenous saving rate and is measured as a ratio of GDP. However, many studies find evidence that, besides the positive impact of an exogenously determined investment ratio on growth, there might exist a positive association between the two factors whereby growth opportunities would favor investment [Barro, 1996; Mankiw et al., 1992]. What are the implications for this study, in terms of possible endogeneity of investment? A new run of regressions (11) and (12) is executed without investment in physical capital *INVEST* (not reported in Table 3). This leads to a reduction in adjusted R-square by six percent, and a moderate increase in the magnitude of the coefficients on sociopolitical instability, initial political rights, and the regional dummies. But the essential findings from the empirical analysis are not altered in any significant manner.

The purpose in this sub-section was to assert the statistical soundness of the empirical outcomes of the political variables. The aim was to establish the credibility of the results from Table 2 that found that the political (**P**) variables were believable causal channels for economic growth. The seven regressions in Table 3 allowed for variations in the conditioning of the model. Regardless of the other (**Z**) variables or the combination of other (**Z**) variables utilized to augment the final political economy model of regression (5), all political proxies remained strongly statistically significant. They consistently maintained robustness, even when investment in physical capital is not included, while the explanatory power of the model augmented in a steady fashion. This lends credence to the hypotheses set forth in this research regarding the three features that were assumed critical in understanding the interaction between the political structure and economic performance.

CONCLUSION

This paper aimed to analyze underlying mechanisms by which components of the political economy influence economic growth. It posited that the sociopolitical environment exhibits various characteristics that, to the extent that the data available allow, should be accounted for if there is to be a credible explanation about the relationship between that environment and growth. This analysis innovated with the introduction of the concept of initial democratic capital, arguing that the political makeup in the sample period may be better understood if the political legacy from previous years is also considered. The results of the empirical analysis supported that proposition, along with the hypotheses that democratic types of political regime are more favorable for economic prosperity, that a nonlinear relationship exists between growth and regime type, and that sociopolitical stability is a necessary complementary condition.

Are the partial effects generated by this investigation strong enough to warrant valid policy implications regarding the political economy of economic growth? According to the test for robustness conducted through the other growth-related (**Z**) variables, they are. An interesting corollary of that sensitivity analysis pointed to the importance of economic freedom and human capital. Consistent with the existing literature, their promotion should be regarded as another desirable feature of policy making in promoting economic expansion.

Where does this research leave the discussion over the impact of regime type on growth? Has its novel perspective to approach the sociopolitical environment succeeded in putting that debate to rest? I will certainly not go that far. Despite the robustness of results obtained for a sample period that I purposely chose to overlap that of many existing studies, the disparity of outcomes in the literature remains puzzling. Before definite conclusions can be reached, a comprehensive review of the literature seems necessary. The latter should go beyond the usual reporting of diverging results to analyze variations in the methodology used by each study either to depict the features of the political system or to conduct the empirical analysis.

Apart from the positive impact of democracy on a nation's material welfare, a valid moral argument also can be made regarding the intrinsic desirability of democracy, as one political system that upholds political freedom and nurtures civil liberties. By empowering the citizenry through enfranchisement and the respect of the rights of the individual with respect to the state and the larger social group, democracy stands as a prerequisite of social justice. Another extension of the research can be to expand the period of study to include the 1990s, a decade where the dramatic gains recorded for political freedom in the 1980s continued. It would therefore be interesting to determine whether the substantial strides made by democracy throughout the world in the last decade of the twentieth century were accompanied by improved economic performance.

NOTES

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1. Surveys of the empirical literature on the relationship between democracy and growth can be found in Kormendi and Meguire [1985], Barro [1991], De Haan and Siermann [1995], and Ali [1997].
2. The choice of time period (1972-1989) is dictated by data availability, in addition to the logic of conducting this analysis in a period similar to that of previous research so that the results can be compared. 1972 is retained as the sample's first year because this is the first year for which the sociopolitical data utilized here became available.
3. The choice of countries to include in the sample is dictated by simultaneous availability of the various categories of data utilized in the empirical analysis. Appendix A presents the list of retained countries.
4. By comparison, the French colonization tended to exhibit a lack of permeability. Many French colonies did not seem to have enjoyed a significant opportunity to learn administrative skills and democratic principles from their rulers. This was the case even during the French Revolution (the 1790s), a time of sweeping changes in the French sociopolitical environment. Every effort was made to insulate the colonies and nullify possible contagious effects of the revolution there. That effort failed in the case of one of the most prosperous French colonies, *Saint Domingue* (on the island of Hispaniola

in the Caribbean). Propelled at the time in part by the course of events in France, that colony went ahead with its own revolution to declare independence in 1804 under the name of Republic of Haiti. That model spurred, and the new nation occasionally supported, a wave of emancipatory events in the Caribbean and Latin America throughout the nineteenth century.

5. A desirable endeavor would be to consider alternative proxies for initial democratic capital. An appealing candidate is the number of years a country was democratic in the two or three decades before the sample period began. However, data limitations make this difficult to use as a measure of initial democratic capital in the context of the period studied. Nonetheless, intuitively, the 1972 level of democracy adopted here is an acceptable indicator of initial democratic capital. History suggests that countries (such as those in the OECD) that were consistently democratic in the post-World War II years also tended to do better economically in the 1970s and 1980s than their authoritarian counterparts. That observation is congruent with this study's hypothesis about the relevance of initial democratic capital for growth.
6. The number of revolutions and attempted coups d'état are likely to miss the impact of activities that effectively disturb stability without actually succeeding in removing the government or attempting to do so. These include the weakening of the government because of systematic rejection of its bills by the parliament; frequent street demonstrations by the opposition or by pressure groups; and so on. Similarly, political assassinations and executive turnover are likely to allow only for a partial assessment of instability. A political system may be inherently unstable in the absence of high executive turnover, and frequent changes of government do not necessarily imply a high level of instability. For instance, Italy remained a stable democracy despite experiencing over fifty governments in the four decades following World War II. This is captured by the proxy for sociopolitical stability that stands for Italy at 0.44, a relatively low score compared to the proxy's mean value for the entire sample (0.61) and to the scores of Greece (1.65) and Argentina (2.02), two countries that were much less stable in the sample period.
7. For example, countries with a score of 1 and countries with a score of 2 are all "free", but the latter (India, for example) are somewhat less democratic that the former (Canada). Countries with a score of 6 and countries with a score of 7 are all "not free", but the latter (Benin) are somewhat more authoritarian than the former (Algeria).
8. For example, Italy was a democracy in the sample period but it alternately scored 1 and 2 from one year to another; Haiti was an autocracy but it alternately scored 6 and 7. The three intermediate classes (3, 4, and 5) provide even more flexibility in categorizing mixed regimes.
9. However, this variable fails in cases where a country remained in the same class throughout the sample period (total absence of variability). A country that experienced repeated coups but remained authoritarian at either 6 or 7, exclusively, would be wrongly represented as stable due to a standard deviation of zero. Interestingly, this happens to only one of the eighty-two retained countries: Benin. Other countries that would be in the same case were dropped from a larger sample for lack of one or more categories of data (Gabon, Guinea, Romania, Saudi Arabia, the former Czechoslovakia, and Somalia). Except for Benin, the sociopolitical stability variable does contribute in measuring fluctuations in political freedom resulting from the inherent dynamism of a political system.
10. Due to the presence of an intercept in the model, including all five regional dummy variables at once in the same regression would result in perfect multicollinearity, and the regression could not be run. This is avoided by omitting one or some of the dummy variables in any individual regression [Kennedy, 1998, 222]. The choice of dummies to regroup together is based on the historical evidence about similarities in growth performance.

APPENDIX A
Sample Countries

Sub-Saharan Africa	North Africa & the Middle East	Latin America & the Caribbean	North America & Europe	Asia & the Pacific
1- Benin	21- Algeria	28- Costa Rica	48- Canada	69- Bangladesh
2- Botswana	22- Egypt	29- Dominican Republic	49- Mexico	70- India
3- Cameroon	23- Tunisia	30- El Salvador	50- USA	71- Indonesia
4- Central African Rep	24- Iran	31- Guatemala	51- Austria	72- Japan
5- Congo	25- Israel	32- Haiti	52- Belgium	73- Korea (South)
6- Ghana	26- Jordan	33- Honduras	53- Denmark	74- Malaysia
7- Kenya	27- Syria	34- Jamaica	54- Finland	75- Pakistan
8- Malawi		35- Nicaragua	55- France	76- Philippines
9- Mali		36- Panama	56- Germany	77- Singapore
10- Mauritius		37- Trinidad & Tobago	57- Greece	78- Sri Lanka
11- Niger		38- Argentina	58- Hungary	79- Taiwan
12- Rwanda		39- Bolivia	59- Ireland	80- Thailand
13- Senegal		40- Brazil	60- Italy	81- Australia
14- Sierra Leone		41- Chile	61- Netherlands	82- New Zealand
15- South Africa		42- Colombia	62- Norway	
16- Togo		43- Ecuador	63- Portugal	
17- Uganda		44- Paraguay	64- Spain	
18- Zaire		45- Peru	65- Sweden	
19- Zambia		46- Uruguay	66- Switzerland	
20- Zimbabwe		47- Venezuela	67- Turkey	
			68- United Kingdom	

APPENDIX B
DATA: DESCRIPTION AND SOURCES

The sample period covers the 1970s and the 1980s (precisely: 1972-1989).

The three neoclassical variables are from *Penn World Table* [Summers and Heston, 1991]. They are:

STARTGDP (y_0) is the logarithm of the PPP-adjusted real GDP per capita at the start of the sample period, i.e. in 1972.

POP (n) is the average growth rate of population in the sample period.

INVEST (s) is the average level of investment in physical capital in the sample period, measured in percentage of GDP.

The five sociopolitical variables are from the index of political rights of *The Annual Survey of Political Rights and Civil Liberties* [Gastil and Freedom House, annual since 1972]. The survey has been extensively utilized in the literature to measure the levels of political and civil freedoms. It uses a scale of 1 to 7, where scores of 1 and 2 indicate the most democratic regimes ("free" by the survey's nomenclature),

scores of 3, 4, and 5 indicate mixed regimes ("partly free" or semi-democratic), and scores of 6 and 7 indicate authoritarian regimes ("not free" or nondemocratic). This approach conceptualizes regime type along a continuum where democracy (1) and autocracy (7) occupy the two extremes. Thus, democracy is viewed analytically as the opposite of autocracy. For more details about methodological issues, see the 1999-2000 survey.

The five sociopolitical variables are:

REGTYPE is a proxy for regime type. It is the average level of political rights, that is, the mean of the Gastil political rights series for the 1970s and 1980s. The higher *REGTYPE* is (that is, the closer it is to 7, the authoritarian bound), the lower the level of political rights is, and the least democratic the system is. Hence the expectation of a negative sign for *REGTYPE*. This variable is essentially a proxy for autocracy (regime types located closer to the "7" extreme) and, inversely, for democracy (regime types located closer to the "1" extreme).

Q_REGTYPE is a quadratic specification of *REGTYPE*, aimed to capture nonlinearity effects in the relationship between growth and regime type.

INSTABILITY is a proxy for sociopolitical instability. Due to the practical difficulty of exactly assessing instability, I use the standard deviation of the Gastil political rights series. The more spread out a country's political rights series was in the period under study (that is, the more variability it exhibited around its central value), the more that country moved from one score to another within the Gastil scale, the less stable it was due to structural inability to settle down anywhere within the 7-score spectrum.

STARTPOL captures every country's initial level of Gastil political rights (that is, in 1972). It helps to determine whether it makes sense to account for the extent of political rights at the start of the period.

STARTDEMOC is the indicator of *initial democratic capital*. It is a dummy variable capturing the initial level of democracy (that is, the level of democracy in 1972). The sample is split so as to include two broad Gastil classes of countries in 1972: democratic regimes (*STARTDEMOC*=1 if 1=*STARTPOL*<=3), and nondemocratic regimes (*STARTDEMOC*=0 if 4=>*STARTPOL*=7). The democratic threshold is thus set at 3. A "natural" threshold would be "2" (recall that Gastil/Freedom House classifies 1-2 countries as free, 3-5 countries as partly free, and 6-7 countries as not free). I set the cutoff score at 3 to remain consistent with the survey which includes in the "free" group countries achieving an average score of up to 2.5 for the political rights ratings and the civil liberties ratings taken together (2 in political rights and 3 in civil liberties, or 3 in political rights and 2 in civil liberties; Freedom House, 1999-2000, 588). Also, using a cutoff score of 3 is consistent with the empirical analysis: 3 is the score at which growth reaches its highest potential (depicted in Figure 1).

The data for economic freedom are from *Economic Freedom of the World, 1975-1995* [Gwartney, Lawson and Block, 1996]. Two variables are constructed using that survey:

ECONFREE is a 1-to-10 scale. A score of 1 indicates the lowest average level of economic freedom, and a score of 10 the highest level, in the sample period.

Q_ECONFREE is a quadratic specification of *ECONFREE*, aimed to capture nonlinearity effects in the relationship between growth and economic freedom.

The data for human capital are from *International Comparisons of Educational Attainment* [Barro and Lee, 1993]. Two variables are constructed from that dataset:

LOWHUMCAP, or low-level human capital, is the percentage of the total population that achieved basic schooling.

HIGHHUMCAP, or high-level human capital, is the percentage of the total population that achieved higher schooling (formal education at college level and beyond).

A number of regional dummies are used:

SUB-SAHAFRICA: Sub-Saharan Africa.

LATAMERICA-CARIB: Latin America and the Caribbean.

NTHAFRICA-MIDEAST: North Africa and the Middle East.

ASIA-PACIFIC: Asia and the Pacific region.

NTHAMERICA-EUROPE: North America and Europe, where most OECD countries are located.

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