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# THE POLITICAL DETERMINANTS OF ECONOMIC PERFORMANCE

## Political Competition and the Sources of Growth

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The authors present and test a theory about the effects of political competition on the sources of economic growth. Using Mankiw, Romer, and Weil's model of economic growth and data for roughly 80 countries, the authors show that political competition decreases the rate of physical capital accumulation and labor mobilization but increases the rate of human capital accumulation and (less conclusively) the rate of productivity change. The results suggest that political competition systematically affects the sources of growth, but those effects are cross-cutting, explaining why democracy itself may be ambiguous. These findings help clarify the debate about regime type and economic performance and suggest new avenues for research.

*Keywords:* political competition; economic growth; human capital; productivity; investment

**T**he literature about the political economy of economic growth has exploded over the past decade, as academics have churned out thousands of articles seeking to explain why some countries are rich and others poor. Despite a multitude of studies, the effect of democracy on economic performance remains a critically important, yet unresolved, question.<sup>1</sup> As

1. Three empirical findings are generally accepted: Human capital and property rights are positively correlated with growth, and political instability is negatively related to growth (Persson & Tabellini, 2000).

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Przeworski and Limongi (1993) put it in their comprehensive literature review, despite a wide range of hypotheses about why democracy might be good or bad for growth and a plethora of quantitative studies, “we [still] do not know whether democracy fosters or hinders economic growth” (p. 64). According to Przeworski and Limongi, 8 of the 21 articles published on the subject between 1966 and 1992 found that democracies grow faster, 8 found that authoritarian regimes grow faster, and 5 found no relationship at all.<sup>2</sup> To help resolve this question and explain why previous results are so contradictory, we alter the dependent variable. Rather than focusing on economic growth itself, defined as a rise in per capita income, we map political characteristics onto the sources of growth: factor capital accumulation (e.g., labor and capital), human capital accumulation, and productivity.

Framing the question of the political economy of growth in terms of the sources of growth helps us break the theoretical and empirical impasse that currently characterizes the literature. Until recently, most efforts to examine the relationship between politics and economic performance have focused on growth as the dependent variable. The problem with this direct approach is that there are multiple sources of growth, as Mokyr (1990); Maddison (1987); and Mankiw, Romer, and Weil (1992) indicate. If the same institution affects these sources differently, as our results suggest, then jumping from institutions to growth can be misleading. To overcome this problem, a few scholars have begun to examine how institutions affect the channels of growth, including human capital and productivity (Baum & Lake, 2003; Hall & Jones, 1998; Przeworski, Alvarez, Cheibub, & Limongi, 2000; Wacziarg, 2001). Those works suggest that democracy has a systematic effect on the pattern of economic performance, if not the rate of growth itself.

We extend this line of research by integrating the main model of political competition, the median voter model, with the main model of economic growth, the augmented neoclassical model of Mankiw et al. (1992). Following North (1981) and Rodrik (2000), our premise is that institutions are important because they structure the environment, providing economic agents different incentives to supply factors of production, to specialize, and to innovate. The logic of the median voter model provides good theoretical reasons to believe that one political characteristic, the degree of political competition, has systematic effects on the different components of the augmented neoclassical growth model: capital and labor accumulation, human capital accumulation, and productivity growth. Whereas political competition ought to discourage physical capital and labor accumulation, it should

2. Sirowy and Inkeles (1991) find similar results. However, Leblang (1997) finds that initial levels of democracy have a positive effect on growth rates.

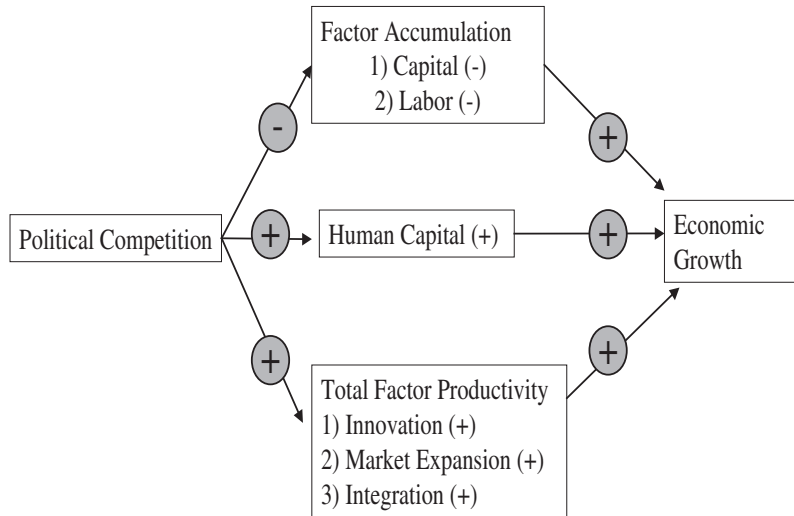


Figure 1. Political competition and the sources of growth.

encourage human capital accumulation and productivity gains (Figure 1). To test these propositions, we use cross-sectional time-series data for as many as 90 countries from five continents. The results provide support for these hypotheses: Political competition decreases the rate of labor and capital accumulation, but it increases the rate of human capital accumulation and, more tentatively, technological innovation. Although the coefficients are small, especially in the cross-sectional analysis, the tests show a systematic relationship consistent with our predictions. In effect, regimes with more political competition may not grow any faster or slower than less competitive regimes, but they grow differently, relying more on intensive as opposed to extensive growth, a point suggested (but not pursued) by Przeworski et al. (2000).

Before setting out our theory and elaborating our findings, it is important to clarify what we are not doing. We are not providing a comprehensive explanation for the individual sources of growth. Physical capital accumulation, for example, is clearly influenced by myriad factors, including the structure of the economy and the intellectual milieu of the day, while human capital accumulation is influenced by the income levels and ethnic diversity of society (Easterly & Levine, 1997). Nor are we trying to claim credit for the notion that political systems affect people's incentives to produce, invest,

consume, and innovate; John Locke and Adam Smith, among others, beat us to that punch. Our goal is to systematically map political characteristics onto the key sources of economic growth, providing a theoretically coherent (albeit partial) explanation of the empirical record.

We begin with a brief literature review, looking first at the formal economic models and then at the political economy literature. We later present our tests and discuss the results.

### ECONOMIC MODELS OF GROWTH

Although the question of why some countries are rich and others poor is perhaps *the* question in political economy, there is no universally accepted model of economic growth. The workhorse model, devised by Solow (1956), states that given additional factor inputs and decreasing returns to capital, poor economies will grow faster than rich ones until all economies converge at the same steady state. Solow's growth model remains a remarkable accomplishment, but it has several limitations: First, when developing countries are included in empirical testing, divergence rather than convergence seems to be the rule (Pritchett, 1997); and second, much of the explanation for growth resides in the error term. More recently, economists have spent considerable time unpacking the error term of Solow's model, adding a number of variables to the equation, notably human capital but also structural change, trade, economies of scale, and catch-up effects (Maddison, 1987).

Mankiw et al. (1992) present the most empirically parsimonious second-generation model (the MRW model), modifying Solow's (1956) model to account for human capital accumulation. The MRW model is formally represented as follows:

$$Y_{(t)} = K_{(t)}^{\alpha} H_{(t)}^{\beta} (A_{(t)} L_{(t)})^{1-\alpha-\beta},$$

where output ( $Y$ ) is a function of physical capital ( $K$ ), human capital ( $H$ ), labor supply ( $L$ ), and technical efficiency ( $A$ ). The MRW model assumes that technical efficiency grows at the same exogenous rate across countries. Investment rates in human and physical capital are constant across time but not countries. Countries also vary in terms of their initial levels of human and physical capital, their initial levels of efficiency, and their growth rates in labor. The MRW conditional convergence model better fits the data, accounting for approximately 80% of cross-country variations in income, but most of the driving forces are exogenous. It raises the question of why countries have different rates of capital accumulation, labor supply, and technological change.

### POLITICAL ECONOMY

Given the desire to endogenize the sources of growth, an increasing number of scholars have incorporated political variables into their analyses, ranging from property rights to regime type (Buchanan, Tollison, & Tullock, 1980; North, 1981; Wade, 1990). The point of this literature is that many of the variables that affect growth are not structurally given but reflect policy choices made by real people and real governments rather than benevolent social planners. Whether people chose to supply factors of production, invest, and/or innovate depends largely on their incentives to do so.

In the end, much of the political economy literature boils down to a debate over regime type. Some people claim that the state needs to be insulated from redistributive forces found in democracies (Olson, 1982). Others claim that democracies are better providers of public goods (Lake & Baum, 2001) or a source of credibility because they limit the ability of state predation (North & Weingast, 1989). Proponents of the nondemocracy perspective argue that democracy can retard growth because rulers are subject to short-term political pressures, particularly from distributional coalitions. Nondemocracies may grow faster because secure rulers will have extended time horizons, allowing for astute planning. East Asia's "developmental" states are often cited in support of this hypothesis. According to the stylized model, the East Asian "tigers" pursued successful industrial policies and promoted export-led industrialization, strategically promoting exports while limiting imports (Wade, 1990).

In terms of economic growth, there are three problems with the developmental state story. First, it cannot be generalized, suggesting that the assumption of benign state motivation is problematic. In fact, the picture that emerges from the large-number studies is that authoritarian regimes are not homogeneous (Alesina & Perotti, 1994). Some dictatorships have done exceptionally well in terms of growth, but most have done quite poorly. Democracies, on the other hand, appear to be relatively consistent, performing better than the average nondemocracy but not as well as the best of them. Second, as Young (1995) pointed out, much of East Asia's growth can be traced to increased factor inputs rather than increased efficiency, as one would expect from a pure export story. Third, it is not clear that state intervention actually worked. Beason and Weinstein (1996), for example, show that industrial policy in the paradigmatic development state, Japan, was disproportionately directed at low-growth sectors with decreasing returns to scale. This does not mean that there is no East Asian miracle to explain, however. What is missing from most accounts is an explanation for why East Asian savings and investment rates increased so substantially following

World War II (Rodrik, 1997). Why did capitalists and workers supply their factor of production? How did governments, particularly authoritarian ones, overcome the credibility problem?

The view that democracy promotes growth is commonly associated with North and Weingast (1989), who indicate that checks and balances within democracy serve as a form of credible commitment against predation, signaling to economic agents that their investments will be safe. North and Weingast's model of limited intervention fits well with economic theory about market development, but several objections can be raised. First, from a theoretical standpoint, it is not clear that democracies will provide more secure property rights. In historical perspective, democracy has been associated with insecure property rights, according to Przeworski and Limongi (1993). In a more recent study, Clague, Keefer, Knack, and Olson (1999) found that there was no clear-cut relationship between property rights and democracy; long-standing regimes, democratic and nondemocratic alike, afforded substantially better property rights protection than new regimes. Second, as Borner, Brunetti, and Weder (1995) and others show, there are multiple forms of establishing credibility, including openness and the delegation of public authority to private agents. Finally, the empirical results are ambiguous, as noted by Sirowy and Inkeles (1991), Przeworski and Limongi (1993), and Barro (1996).

### **THE CROSS-CUTTING EFFECTS OF POLITICAL COMPETITION**

What explains the empirical record? We theorize that one defining feature is the degree of political competition. As Olson (2000) points out, political competition fundamentally affects how governments manage the economy, thereby influencing the returns, to productive versus nonproductive activity for individuals. These returns, in turn, directly influence the propensity of economic agents to supply factors of production (e.g., labor and capital), specialize, and innovate, helping dictate the course of economic development.

There are a number of ways of thinking about how competition affects the incentives of various actors to engage in productive versus nonproductive activity (e.g., rent seeking). Perhaps the most common argument, especially in the formal literature, is that political competition dissipates rents in the political market, just as in economic ones (Becker, 1983). The general idea is that a ruler (party) in a noncompetitive environment can offer subjects (voters) whatever economic policies the ruler desires, maximizing his or her own rents or those of privileged groups (McGuire & Olson, 1996). Citizens (vot-

ers) are effectively price takers, because their main option for preventing rent seeking by rulers is to withdraw from production, an option that may not be available in the event of coercion. Without political competition, rulers can force citizens or subjects to supply at least part of their labor and capital, generating rents that can then be expropriated by the rulers or redistributed to favored groups. Absent some other form of incentives, however, rulers may not be able to persuade citizens to supply their brains, because creativity will be directed toward activities (noneconomic in many cases) in which rents cannot be expropriated.

In an environment in which rulers must compete for subjects' allegiance, the opposite occurs. To retain power, rulers must provide benefits that subjects want, minimizing their opportunities to capture rents for themselves or other groups. As a result, political competition encourages politicians to compete away rents that benefit narrow groups. In practice, these rents could include tariff protection, restrictions on capital mobility, and other forms of potentially unproductive government intervention. The greater the competition facing rulers, the more government benefits should be directed toward representative and pivotal citizens (the median voter in the standard case) and the less largess rulers will have to bestow on favored groups. As a result, these groups will have fewer incentives to lobby for government favors. Instead, they have incentives to engage in productive activities insofar as other citizens cannot expropriate the returns from those activities.

In practice, political competition could take a number of different forms, but the most common framework involves electoral competition, in which politicians or parties must compete for the support of the enfranchised via elections. Elections matter because they lower the barriers to entry, allowing citizens to register their preferences, sanction poor leadership, and ultimately become candidates themselves if they are unsatisfied with the performance of established politicians. In this respect, the extent of the franchise in democracies or the relative size of the group that selects leaders in non-democracies (the selectorate) is crucial because it determines who is the representative citizen or median voter.

This basic model of political competition can be mapped onto the sources of economic growth. Consider how political competition, specifically electoral competition with universal suffrage, might reduce the incentives to accumulate capital. The standard median voter model of democracy posits that political competition allows voters to use the state as a source of redistribution. Assuming that the median voter has an income lower than the mean income, middle and lower income earners can use their voting power to tax the wealthy. Although this might lead to higher after-tax incomes for the majority in the short run, it should also lower incentives for accumulation,

especially among the rich (Alesina, 1992). In effect, political competition encourages a form of rent seeking by the median voter, thereby decreasing capital accumulation by people with higher incomes. Restricting the franchise to upper income groups would move the median voter closer to (or even above) the person with the mean income, thereby decreasing the possibility for redistribution from rich to poor. This in turn would provide the wealthy with increased incentives to accumulate capital.

Political competition could also systematically affect fiscal and monetary policies, generating political business cycles that undermine incentives to invest. In the face of highly competitive elections, politicians have incentives to forsake long-term stewardship for short-term exigencies, promoting fiscal and or monetary extravagance. Although these incentives could be mitigated by *ex post* sanctions, institutional constraints, or reputation concerns, so-called political business cycles have been characteristic of many democracies until recently, and the historical record is replete with instances of democratic crapulence (Alesina, 1992; Gasiorowski, 2000).<sup>3</sup> More recently, rich democracies have learned to mitigate myopia through the creation of independent central banks, suggesting that political competition provides politicians with powerful incentives to solve their collective action problems, but such institutions have been relatively rare until the past decade. Nondemocratic leaders also have incentives to allocate budgets and credits to coalition partners, but without regular elections, they have few incentives to engage in fiscal and/or monetary manipulations that they know will result in long-term ruin. Unless their time horizons are shortened by immediate threats to survival, such as war, leaders in less competitive regimes have incentives to manage monetary and fiscal policy responsibly, especially if they are the residual claimants on output (McGuire & Olson, 1996). In short, there are several good theoretical reasons to believe that democracies will have lower investment levels.

Political competition could have a similar effect on labor supply, the second important source of growth. Unlike democracies, which have to rely largely on consent, less competitive regimes have the advantage of coercion, allowing them to repress labor organizations and compel people to work. In fact, in the complete absence of political competition, rulers could effectively enslave large numbers of people, forcing them to work at below-market wages, a situation that is by no means a historical anomaly. Less competitive regimes are also relatively insulated from distributive pressures, reducing the need for social welfare expenditures. In the absence of such guarantees, most

3. In perhaps the most systematic test to date, Gasiorowski (2000) found that more democratic developing countries have higher rates of inflation than less democratic ones because of higher budget deficits and faster wage growth.

people have incentives to enter the labor market and provide for themselves, increasing the supply of labor. In a competitive environment, in contrast, the median voter has incentives to push for social programs that mitigate the vagaries of the market. Social insurance in turn could reduce the difference between market returns and subsidized leisure, discouraging people from supplying their labor.

Although political competition could discourage investment in physical capital for the aforementioned reasons, it should have the opposite effect on human capital. The same median voter model, for example, suggests that the electoral connection will provide politicians with incentives to supply public goods, especially education.<sup>4</sup> Assuming that there is a universal demand for public education and health, the majority of citizens in competitive regimes can use the state to provide goods with positive externalities, such as schools and health care, raising the level of human capital and increasing the long-run growth rate.

More competitive regimes are also more likely to experience productivity increases for two reasons. The first reason is that political competition is likely to stimulate innovation and the diffusion of best practices (Wittman, 1989). In politically competitive regimes, the best ideas are more likely to filter their way through the political and economic system, eventually turning into policies and products. And as Mokyr (1990) notes, it is the application of information that is the wealth of nations. The second reason more competitive regimes might promote increases in total factor productivity is that more competitive regimes are more likely to remove key sources of rents, notably unproductive domestic regulation and tariff protection, while encouraging more productive forms of intervention, such as antitrust regulation and/or consumer protection. Promarket measures should increase the private returns to productive activities, encouraging the efficient use of resources and the production of new processes and procedures.

In sum, there are a number of theoretical reasons to believe that political competition may have a negative effect on physical capital accumulation and labor mobilization but a positive effect on human capital accumulation and productivity. Hence, the general hypotheses that follow from our argument are the following:

*Hypothesis 1:* More (less) competitive political regimes promote less (more) factor mobilization.

4. Lake and Baum (2001) found that democracies produce more public goods in terms of health, education, and infrastructure. In a more focused test, Wacziarg (2001) showed that democracy increases secondary school enrollment and the rate of educational attainment.

*Hypothesis 2:* More (less) competitive political regimes promote more (less) accumulation of human capital.

*Hypothesis 3:* More (less) competitive political regimes promote higher (lower) productivity.

## RESEARCH DESIGN

To assess the plausibility of our argument, in the following section, we derive six working hypotheses from these general hypotheses. This section discusses the operationalization of those hypotheses, the choice of variables, data sources, and the specification of econometric models. The tests are conducted using a time-series cross-sectional panel of countries consisting of 44 to 91 developed and developing countries over 20 to 38 years, depending on data availability for each dependent variable. The goal of these tests is to show that there are systematic relationships between political competition and the different components of the economic growth function.

### DEPENDENT VARIABLES

*Factor mobilization.* To test the factor mobilization hypothesis (Hypothesis 1), we examine investment rates and labor supply. The operational hypotheses are as follows:

*Hypothesis 1A:* Countries with higher scores on the political competition index will have lower levels of capital formation relative to gross domestic product (GDP).

Positive changes in the political competition score, discussed in the following section, lead to negative changes in the ratio of investment to GDP. Data about investment are taken from the Penn World Table (Heston, Summers, & Aten, 2002), which is specifically designed for cross-country studies. The measure we use is investment share of real per capita GDP (INVEST), using the chain index, which is available from 1960 to 1998 with some gaps in coverage.<sup>5</sup>

*Hypothesis 1B:* Countries with higher scores on the political competition index have lower labor inputs relative to population.

5. We also used the World Bank's gross capital formation as a percentage of gross domestic product, drawn from *World Development Indicators 2001*. The results are essentially the same, though the number of observations and groups is lower.

Positive changes in the political competition scores lead to negative changes in labor inputs relative to population. Testing this hypothesis is more challenging because data about employment and labor supply are poor. Our ideal measure would be hours worked per person per year, but as far as we are aware, no good cross-country data of this sort exist, especially for countries outside of the Organisation for Economic Co-operation and Development. The World Bank has global data about the size of the labor force, but these measure the number of able-bodied people who could work, not the number of people who actually work or the hours they put in. To partially get around these problems, we use World Bank data to construct a variable called labor supply (LAB\_SUP), which is the labor force minus the total number of people unemployed, divided by the working-age population: Labor Supply = (Labor Force – Unemployed) / Working-Age Population.<sup>6</sup> This measure is by no means ideal, in part because data on unemployment are scarce, depressing the number of groups to about 60, but it captures the idea that the workforce is only potential labor, not a measure of actual labor supplied. The data are available from *World Development Indicators (WDI)* (World Bank, 2001) from 1980 to 1998, with considerable gaps.

*Human capital.* To test the human capital hypothesis (Hypothesis 2), we look at education levels. The operational hypothesis is as follows:

*Hypothesis 2A:* More competitive regimes will have higher levels of school enrollment.

As a measure of schooling, we use secondary enrollment (SEC\_EN), calculated as a percentage of cohort. Secondary enrollment is by no means the only way of measuring human capital (life expectancy is also common), but it is the standard in the literature, and our hypothesis is relatively uncontroversial; the bulk of the evidence suggests that democracies have higher levels of human capital (Lake & Baum, 2001; Wacziarg, 2001). Data about secondary school enrollment are available on an annual basis for a little over 60 countries from 1980 onward, using *WDI* (World Bank, 2001). Once two lags of the dependent variable are included, the number of groups drops to about 46.<sup>7</sup>

6. We multiply this ratio by 100 to obtain a percentage value.

7. Because of the relatively small number, we tried to supplement the World Bank data with two measures of educational attainment from Barro and Lee (1996/2000): average years of education and secondary completion rates. These variables were typically the right sign in our regressions but rarely significant at conventional levels; the results (not shown) are available on request.

*Productivity.* Unfortunately, there is no reliable source for cross-country comparisons of productivity levels, prohibiting any direct test of this hypothesis (Hypothesis 3). Instead, we test productivity by looking at a variety of measures that capture the idea of efficiency. The first two measures look at economic integration, which we believe encourages more efficient resource allocation because it stimulates specialization, the division of labor, competition, and the diffusion of technology, all of which increase productivity. The third measure looks specifically at capital efficiency. There are three operational hypotheses:

*Hypothesis 3A:* More competitive regimes will have higher levels of foreign direct investment (FDI).

Higher levels of FDI indicate flows of capital, technology, and know-how, allowing countries to keep up with international best practices. FDI is measured as a percentage of GDP (FDI / GDP). The data are available from *WDI* (World Bank, 2001) for as many as 92 countries from 1970 to 1998.

*Hypothesis 3B:* More competitive regimes will have higher levels of trade.

Participation in world markets allows countries to take advantage of specialization and the division of labor. Total trade is measured as a percentage of GDP (Trade / GDP): imports plus exports divided by GDP, where exports is the total value of exports in current U.S. dollar prices, and imports is the total yearly value of imports in current U.S. dollar prices. The data are available from the Penn World Table for as many as 90 countries from 1960 to 1998.

*Hypothesis 3C:* More competitive regimes will use of capital more efficiently.

The efficient use of capital is measured in terms of the contribution of investment to economic growth (INVTOGR). Controlling for investment levels, we expect more growth per unit of investment to be a sign of a more productive use of capital.<sup>8</sup> The investment-to-growth measure is available for about 60 countries from 1971 to 1992, with some gaps. The data come from the World Bank's (1997) *World Tables of Economic and Social Indicators*.

8. An argument can be made for using capital-to-labor ratios as an alternative measure of productivity, but we discarded it because we think that this captures relative factor endowment rather than productivity per se.

**EXPLANATORY VARIABLE**

*Political competition.* There are a number of different ways of measuring democracy and political competition. Our point is that the nature of political competition, especially the extent of the franchise, affects the incentives of economic actors because it determines how much rent can be appropriated and by whom. Of the existing indices of democracy, the competitiveness of participation (PARCOMP) measure from the Polity 98 data set (Gurr & Jagers, 1999) comes the closest to capturing this notion of competition.

PARCOMP measures the extent that nonelites are able to access institutional structures for political expression: The greater the extent of the franchise and the more that alternative preferences for policies and leadership can be pursued in the political arena, the higher the PARCOMP score. PARCOMP ranges from 0 (unregulated) to 5 (fully competitive), with 5 indicating open competition for political leadership.<sup>9</sup> The scale captures the idea of competition as a continuum and provides a finer level of discrimination than a simple democracy-dictatorship dichotomy, consistent with other findings that there is considerable variation within the categories of democracy and nondemocracy.

It is worth noting, for example, that some East Asian dictatorships scored 2 or 3 on political competition during their nondemocratic periods, not much lower than some Latin American countries during their early democratic periods. Presumably, the reason for this is that some of the East Asian regimes allowed for some political participation, notably by business organizations, whereas some formally democratic Latin American countries had exceptionally restricted franchises. Most African dictatorships, in contrast, scored 1, reflecting the fact that political space was largely monopolized by small coterie of politicians. There is also large variance on the nondemocratic side of the spectrum: Singapore, for instance, is coded 2 (restricted) since its independence, whereas Congo is coded 1 (suppressed) for the period from 1963 to 1990, 3 (factional) for 1992 to 1996, and 2 from 1997 onward.<sup>10</sup>

9. The coding on PARCOMP is as follows: 0 = unregulated political competition, 1 = suppressed (no significant oppositional activity is permitted outside the ranks of the regime and ruling party), 2 = restricted/transitional (some organized, political competition occurs outside government, without serious factionalism, but the regime sharply limits its form, extent, or both in ways that exclude substantial groups from participation), 3 = factional (shows factional or factional/restricted patterns of competition), 4 = transitional (any transitional arrangements from restricted or factional patterns to fully competitive patterns, or vice versa), and 5 = competitive (there are relatively stable and enduring political groups that regularly compete for political influence at the national level; competition among them seldom causes widespread violence or disruption).

10. Sample scores for countries can be found at <http://weber.ucsd.edu/~kgledits/Polity.html>.

As a robustness test, we supplement PARCOMP with other measures of democracy, described in the footnotes. These measures include Polity 98 data about regime type (REGIME), which combine institutional and behavioral attributes of polities into a composite measure of democracy; Vanhanen's (2000) aggregate Index of Democratization, which combines the vote share of smaller political parties with the percentage of the total population who actually voted; and Freedom House's (2000) composite Index of Democracy (free, partly free, and not free), which is derived from separate measures of political and civil liberties.<sup>11</sup> All of these measures have been subject to some criticism, especially that of Freedom House, which has a more substantive measure of democracy as opposed to a purely procedural one (Munck & Verkuilen, 2002).<sup>12</sup> We prefer Polity 98 (especially PARCOMP) because it better captures the concept of political competition underlying our theory. The Polity 98 and Vanhanen's data have the added advantage that they are available for more years. These indices are highly correlated, and it turns out that the choice of independent variables only has a small impact on our results.

#### CONTROL VARIABLES

For each of the dependent variables in our analysis, myriad specifications are possible. We decide to adopt a minimalist approach, using a limited number of control variables that would help stratify the data in a meaningful way. These variables are comparable across models and are theoretically coherent. In addition, diagnostic tests suggest that they belong in the model. We try to capture unit heterogeneity through fixed effects and time trends with year dummies; the former almost always belong, but not the latter.<sup>13</sup>

11. REGIME is a continuous 21-point index of democracy ranging from -10 to +10, also drawn from the Polity 98 database. Lower values indicate repression, and higher values indicate increased democratic procedures and greater civil liberties. The index is constructed by subtracting the AUTOC values from DEMOC values. Values for transition, coded -66, -77, and -88 in the Polity 98 data set, are dropped, in keeping with the convention in the literature. Vanhanen's Index of Democratization is a 47-point scale that captures the degree of competition, the degree of participation, and the degree of power distribution in a polity. Lower values represent less democracy. Freedom House uses two 7-point scales to measure civil and political liberties. These values are averaged and then used to classify countries into three categories: free, partly free, and not free. The Polity 98 data and Vanhanen's data are available for the entire period, whereas Freedom House's data are available only from 1972 onward.

12. Freedom House, for example, included "socioeconomic rights," "property rights," and "freedom from gross inequalities" as attributes of democracy. (See Munck & Verkuilen, 2002, for a comprehensive review.)

13. We also test (but do not report here) for regional effects, using dummy variables for Europe, Latin America, North America, Asia, and Africa. Although some of the regional dum-

*Per capita income.* To capture country wealth, the regressions include real GDP per capita, calculated via the chain method, or its natural log (LNRGDPCH).<sup>14</sup> The data are drawn from the Penn World Table.

*GDP.* To capture size of the market, we use real GDP in billions of constant U.S. dollars, calculated via the chain method (REALGDP). The natural log of GDP (LNGDP) is also used in cases in which it proves to be a better fit. The source for both is the Penn World Table.

*Population.* As a control for country size, we use population in millions (POP\_MIL) or its natural log (LNPOP). The source is the World Bank's (2001) WDI.<sup>15</sup>

*Trade to GDP.* The measure is the same as above.

#### UNIT OF ANALYSIS

Unless otherwise stated, the unit of analysis is country<sub>*i*</sub> and year<sub>*t*</sub>. We also conduct most of our tests with 5-year intervals (not reported here). The results were consistent, and in most cases the coefficients were much larger.<sup>16</sup>

#### CASE SELECTION

To maximize the information for analysis (a long time series for as many countries as possible), we placed very few restrictions on the data. Of the 189/207 countries listed in the World Bank's (2001) *WDI* data set, we deliberately dropped those with fewer than 1 million people in 1980, and we were forced to drop a number of countries because of missing data. Using lagged variables further reduced the sample. Even so, we were able to conduct our tests on anywhere from 46 to 91 countries. The total number of observations, after eliminating missing values, ranges from 306 for secondary education to over 3,000 for trade. With the possible exception of secondary education, the

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mies are significant (such as Asia with investment), none of them substantially changes the results obtained through fixed effects.

14. In several specifications, the unit is U.S.\$1,000 to reduce the number of decimal places on the estimated coefficients.

15. An alternative measure of size would be area, but this variable is essentially constant over time for each country, precluding its use with fixed effects.

16. The most likely explanation for the discrepancy in coefficient size is that the variables change slowly within countries. In the yearly specification, more of the variance is captured by lags of the dependent variable. In the 5-year specification, less of the variance is captured by lags of the dependent variable.

selected sample should be sufficient to make valid generalizations, because it includes countries at different levels of economic development, from different geographical regions, and with different political characteristics.<sup>17</sup>

#### MODEL SPECIFICATION

With the exception of the investment-to-growth measure, with which we use panel-corrected standard errors, the estimation technique of the econometric models reported below is three-stage least squares, which is designed to deal with problems of endogeneity and simultaneity. In theoretical terms, we do not believe that factor accumulation should lead to higher or lower levels of political competition, but we cannot a priori discard simultaneity effects.<sup>18</sup> In particular, we are worried that our main explanatory variable, political competition, could be related to other variables in the system, especially to wealth, which we proxy with per capita income.<sup>19</sup> The concern is even stronger when dealing with the human capital hypotheses, for which our predictions are in line with those of the neoclassical economic literature: a positive correlation between human capital accumulation and political competition through economic growth.<sup>20</sup> Under these circumstances, ordinary least squares estimates are inconsistent.

To test for simultaneity, we conduct a Durbin-Wu-Hausman augmented regression test for endogeneity (Davidson & Mackinnon, 1993). These tests suggest that the null hypotheses of no simultaneity cannot be rejected for all but one of the dependent variables: the contribution of investment to growth.<sup>21</sup>

17. On the Web site (<http://www.columbia.edu/~pp2162/sources.html>), we reproduce the list of countries and years with the tables of results for each set of equations.

18. Simultaneity occurs when some of the regressors are endogenously determined and hence correlated with the disturbance term. These effects need to be tested rather than assumed, especially when dealing with aggregate data.

19. Economic wisdom tells us that factor accumulation should lead to higher economic growth, leading to higher rather than lower levels of democracy. Thus investment could have feedback effects on political competition through wealth. Lipset (1959), for example, argued that there is a strong correlation between economic development and the probability of being a democracy. Similarly, Barro (1996) found that various conditions, such as per capita income, life expectancy, and education, are good predictors of democracy.

20. We tried to assess whether causality could run in the opposite direction, namely, from sources of growth to democracy. Although the structure of the data precludes an unambiguous conclusion, a battery of Granger causality tests within each country suggests that the direction of causality runs from political competition to the sources of growth, rather than the other way around. Note that these are tests of conditional independence (whether  $y$  predates  $x$  or vice versa) rather than proper proof of causality.

21. For investment to growth, the coefficient on the residual is significantly different from zero in the augmented regressions, suggesting that we can reject the null hypothesis of no simul-

Two-stage least squares (instrumental variables) would be an acceptable solution to the problem of simultaneity, because it yields consistent and efficient estimates. Unfortunately, however, two-stage least squares is not ideal with time-series cross-sectional data when lagged dependent variables are used as regressors to control for serial correlation, which we found in the data; in this case, the estimates are consistent but inefficient. The combination of simultaneity and serial correlation forces us to use three-stage least squares, which controls for the feedback effects, is consistent even under correlated errors, and is asymptotically more efficient than the two-stage least squares estimators (Greene, 1997).

Finding an adequate instrument for political competition is a daunting task. Valid instruments need to have high explanatory value and be uncorrelated with the disturbance term. We decided to instrument the main explanatory variables with their lags. These are the best candidates on the first dimension (high explanatory power) and adequate on the second dimension (e.g., they are not contemporaneously correlated with the disturbance term).<sup>22</sup> Following conventional practice, the lagged dependent variable is instrumented for by its lag.

## RESULTS

As detailed below, we find modest to strong support for most of the hypotheses we tested. Controlling for a variety of factors (including income, population, openness, country size, national wealth, country characteristics, and time trends), our results suggest that more competitive regimes invest less as a percentage of GDP and have lower levels of labor supply. They also appear to use capital more efficiently and have higher levels of secondary school enrollment. Whether they are more integrated is an open question. More competitive regimes attract more FDI but may not have higher levels of trade. Table 1 summarizes the results of the econometric models using PARCOMP as the explanatory variable. Except for models reproduced in columns 11 and 12, values of PARCOMP are lagged one period. The complete set of results including the alternative measures of democracy and the

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taneity. Hence, we use panel-corrected standard errors, which should be appropriate in these circumstances (Beck & Katz, 1995).

22. To further reduce the risk of contemporaneous correlation between the explanatory variables and the disturbance terms in the system, we lagged them one period, in which case they are instrumented by a second lag. On the Web site (<http://www.columbia.edu/~pp2162/sources.html>), we also include the contemporaneous level of PARCOMP as the variable that is instrumented for, showing that results are practically invariant to this modeling choice.

contemporaneous relationships between the relevant variables can be found at <http://www.columbia.edu/~pp2162/sources.html>.<sup>23</sup> The results we report are fairly robust to alternative specifications and are not very sensitive to changes in the sample or to alternative measures of democracy. The rub is that the coefficients are relatively small in most cases, considerably less than a standard deviation across the entire sample. It is worth pointing out, however, that the variation within countries is typically less than the variation between countries, the measure used to calculate the standard deviation reported below.

#### CAPITAL ACCUMULATION

As shown in columns 1 and 2, there is a clear negative relationship between investment levels and political competition (PARCOMP). In other words, being or becoming a more competitive political system implies lower investment rates, all else equal. The coefficients are statistically significant beyond conventional levels of confidence in most of the models estimated and are robust to country and time dummies. The caveat is that the coefficient is relatively small in comparison to the full variance of the dependent variable. As column 1 shows, a positive 1-point change in the PARCOMP index is associated with a 0.2% reduction in the investment-to-GDP ratio. Going from the minimum level of political competition to the maximum level would result in a 1% decrease in the gross domestic investment-to-GDP ratio. This figure is considerably less than 1 standard deviation in the sample ( $SD = 9.8$ ), but it is not small when countries are compared with themselves; for most countries, the standard deviation in investment is around 2. The results for the other democracy measures (not shown, but available on the Web site) are similar. REGIME, for example, is associated with a 0.047 reduction in investment-to-GDP, or roughly 1% for the full 21-point range.

#### LABOR SUPPLY

Columns 3 and 4 capture the supply of labor as a production input. In all of the models, PARCOMP and the alternative measures of democracy (not shown) are negatively associated with labor supply, consistent with findings by Przeworski et al. (2000). Most of the coefficients are significant beyond the 95% confidence interval. The effects are small here as well; a 1-point positive change in PARCOMP, for example, is associated with an approximately

23. Each table on the Web site is followed by descriptive statistics of the variables used in the econometric models, including their minimum and maximum values, the standard deviation, and the number of observations.

Table 1  
 Summary Table of Effects of Political Competition (PARCOMP) on Sources of Growth

Model	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Dependent variable	3SLS Investment/GDP	3SLS Investment/GDP	3SLS Labor Supply	3SLS Labor Supply	3SLS Secondary Education	3SLS Secondary Education	3SLS FDI/GDP	3SLS FDI/GDP	3SLS Trade/GDP	3SLS Trade/GDP	3SLS Investment/Growth	3SLS Investment/Growth
Dependent variable, $t-1$	0.8174*** (0.0118)	0.8012*** (0.0126)	0.6198*** (0.0299)	0.5947*** (0.0318)	0.7619*** (0.0482)	0.6319*** (0.0578)	0.5678*** (0.0437)	0.5257*** (0.0459)	0.7936*** (0.0124)	0.7746*** (0.0129)	-0.1067*** (0.0439)	-0.1263*** (0.0425)
Trade/GDP (%)	0.0104*** (0.0033)	0.0149*** (0.0035)	0.0238*** (0.0051)	0.0339*** (0.0053)			0.0194*** (0.0027)	0.0171*** (0.0027)				
Real GDP (billions of U.S. dollars)	0.1317 (0.2097)	0.2017 (0.2075)			0.2803 (0.1715)	0.2517 (0.1641)	0.1224*** (0.0278)	0.0860*** (0.0276)	-1.2469* (0.6407)	-1.6130*** (0.6139)	0.2936* (0.1614)	0.3314*** (0.1618)
ln GDP per capita	-0.7552*** (0.2073)	-0.2620 (0.2365)	2.3311*** (0.4562)	4.5734*** (0.6477)	0.3690 (1.7575)	-4.9643** (1.9395)	-0.0883 (0.1823)	-0.7792*** (0.2398)	6.8039*** (0.6604)	3.5520*** (0.7025)	-3.1281*** (0.8385)	-4.5235*** (1.4554)
Population (millions)	0.0021 (0.0019)	0.0033* (0.0019)	-0.0178*** (0.0047)	-0.0199*** (0.0045)	-0.0002 (0.0555)	-0.0403 (0.0530)	0.0026 (0.0017)	0.0027 (0.0017)	0.0064 (0.0058)	0.0029 (0.0056)		
Investment/GDP											0.4103*** (0.0401)	0.4613*** (0.0431)
PARCOMP <sup>a</sup> <sub><math>t-1</math></sub>	-0.2182*** (0.0628)	-0.1468** (0.0671)	-0.3031** (0.1544)	-0.2428 (0.1494)	1.1172*** (0.3583)	0.8923*** (0.3457)	0.2489*** (0.0577)	0.1047* (0.0606)	0.0932 (0.1882)	-0.3139 (0.1989)	0.4032** (0.1979)	0.1836 (0.1942)
Constant	11.0973*** (1.9002)	4.8644** (2.3399)	-20.289*** (4.078)		7.2252 (13.8856)	42.722*** (14.971)	-4.7008*** (0.8200)	-2.3899*** (0.8883)	-59.5788*** (5.9860)		-11.051*** (3.1668)	-10.909*** (3.4473)
Observations	2,878	2,878	691	691	306	306	2,002	2,002	2,878	2,878	1,053	1,053
Groups	91	91	61	61	46	46	92	92	91	91	60	60
R <sup>2</sup>	.9437	.9460	.9244	.9311	.9954	.9960	.5729	.5930	.9688	.9719	.2003	.2651
Country/year dummies	Yes/no	Yes/yes	Yes/no	Yes/yes	Yes/no	Yes/yes	Yes/no	Yes/yes	Yes/no	Yes/yes	Yes/no	Yes/yes

Note: Standard errors are in parentheses. 3SLS = three-stage least squares; PCSE = panel-corrected standard error; GDP = gross domestic product; FDI = foreign direct investment. a. PARCOMP, in columns 11 and 12.

\*Significant at 10%. \*\*Significant at 5%. \*\*\*Significant at 1%.

0.30 percentage point decrease in labor supply. Going from the minimum level of political competition to the maximum level would result in slightly more than a 1 percentage point decrease in labor supply. This number is considerably less than 1 standard deviation in the sample ( $SD = 9.8$ ), but it is larger vis-à-vis the standard deviation within individual countries.<sup>24</sup> These results should be treated with some caution, because the data are suspect and the coefficients are not always significant with year dummies.<sup>25</sup>

#### HUMAN CAPITAL

Columns 5 and 6 capture the relationship between PARCOMP and secondary school enrollment, our proxy for human capital accumulation. In all of the models, the coefficients are the expected sign and significant at conventional levels. A 1-point positive change in PARCOMP, for example, is associated with a 1.1 percentage points increase in secondary enrollment. Going from the minimum level of political competition to the maximum level would result in a 4.5 percentage points increase in secondary enrollment. This figure is also much less than 1 standard deviation in the sample ( $SD = 28$ ) but appears to be fairly close to the standard deviation for many individual countries.<sup>26</sup> The results also remain robust with alternative measures of democracy and year dummies, supporting the extant findings.

#### PRODUCTIVITY

We could not directly test our conjecture about total factor productivity, but using proxies (FDI, trade, investment efficiency), we find that there is some evidence that more competitive regimes use resources more efficiently. Columns 7 and 8 show the relationship between PARCOMP and FDI. The coefficient is positive and significant with FDI, even with year dummies, suggesting that more competitive regimes attract more FDI each period. A 1-point increase in political competition is associated with a 0.25 percentage point increase in FDI as a percentage of GDP. Going from the minimum level of political competition to the maximum level would result in a 1 percentage point increase in FDI-to-GDP, about half a standard deviation in the sample.

24. The standard deviations for most countries fall between 1 and 3, with a few countries as high as 7.

25. With year dummies, the coefficient remains negative and significant with REGIME and Vanhanen's (2000) Index of Democratization, for example, but it is not quite significant at conventional levels with PARCOMP and FREE.

26. For secondary education, the standard deviations for individual countries vary considerably, from less than 1 in many cases to as large as 24 for Egypt.

Columns 9 and 10 show the relationship between political competition and trade. The coefficient is negative, though not close to significant, suggesting that there may be no systematic relationship between political competition and trade as a percentage of GDP.<sup>27</sup> Columns 11 and 12 show that there is a positive relationship between political competition and the contribution of investment to growth. The coefficients are in the predicted direction and significant at conventional levels with most of the measures of democracy. Controlling for investment levels, a 1-point increase in PARCOMP is associated with a 0.40 percentage point increase in the contribution of investment to growth. What this means in practical terms is not exactly clear, because the transformations involved make it difficult to interpret the coefficient. In principle, however, it suggests that democracies obtain more growth per unit of capital invested. It is worth noting that the coefficients remain positive but not significant with year dummies.

### COMMENTS AND CONCLUSION

The purpose of this article has been to show that political variables systematically affect the rate of physical and human capital accumulation, the supply of labor, and productivity: the building blocks of economic prosperity. Controlling for a variety of factors, we find that political competition has systematic but cross-cutting effects on the sources of growth, lowering the rate of factor mobilization while increasing the rate of human capital accumulation and (more tentatively) productivity. These findings are robust to a variety of specifications and with a number of control variables, including time trends and country specific characteristics.

Although the data offer support for our hypotheses, a number of caveats and comments are in order. First, the coefficients are relatively small, suggesting that political competition may not have much of an impact in the short run. (When we use 5-year intervals, instead of annual observations, the coefficients tend to be substantially larger, but the only plausible theoretical reason for this discrepancy is that the 1-year lags of the dependent variable capture more of the variance than the 5-year lags.) The best explanation may lie in the fact that economic growth is an incremental process, with nearly imperceptible short-run changes having considerable long-run effects. A small annual difference in secondary school enrollment rates may not look like much at any given moment in time, but the cumulative effect of a better

27. It is worth noting that we tried a variety of specifications with trade. The results were quite inconsistent across specifications, suggesting that there is no systematic relationship.

educated workforce may translate into substantial income gains for the next generation. The same could be said for investment and productivity.

Second, the measures and econometric specification of the variables are less than ideal. The fact is that each of these dependent variables could be (and has been) the subject of its own article. To keep this article manageable, we have oversimplified the dependent variables, especially productivity, which has probably been the most important source of growth for most countries in the past decades.

Third, our regressions do not control for a whole host of factors, notably the international environment. Confining the analysis to the nation-state level has the virtue of simplicity, but it excludes important interactions between the international system and individual states. It is certainly plausible that the diffusion of electoral competition may be driving global trends toward lower levels of physical capital accumulation and higher levels of human capital and productivity. Diffusion effects of this sort have clearly been shown to matter in terms of the spread of democracy (Gleditsch, 2002; Ward et al., 1998). Presumably, they should matter for economic change as well.

Fourth, our analysis does not explore the question of whether there are important interactions between regime type, income level and performance. If it is true that factor accumulation is a more important source of growth for poor countries, while human capital and productivity are more important sources of growth for rich countries (because of diminishing marginal returns to factor accumulation), our results might help explain why non-democracies appear to grow faster than their democratic counterparts at low levels of national income. We do not test for this but think it is a plausible conjecture.

Caveats and comments aside, we think that the evidence by and large supports our contention that political competition systematically effects how countries grow rather than the rate at which they grow. Political competition promotes the more efficient use of human and material resources but retards investment rates and perhaps labor supply. These cross-cutting effects help explain why democracy itself may not have a systematic effect on growth rates, helping us understand the confusing empirical record.

## REFERENCES

- Alesina, A. (1992). *Political models of macroeconomic policy and fiscal reforms*. Washington, DC: Country Economics Department, World Bank.
- Alesina, A., & Perotti, R. (1994). The political economy of growth: A critical survey of the recent literature. *World Bank Economic Review*, 8, 351-371.

- Barro, R. J. (1996). Democracy and growth. *Journal of Economic Growth*, 1, 1-27.
- Barro, R. J., & Lee, J. (1996/2000). *International measures of schooling years and schooling quality* [Computer file]. Cambridge, MA: Harvard University.
- Baum, M. A., & Lake, D. A. (2003). The political economy of growth: Democracy and human capital. *American Journal of Political Science*, 47, 333-347.
- Beason, R., & Weinstein, D. E. (1996). Growth, economies of scale, and targeting in Japan (1955-1990). *Review of Economics and Statistics*, 78, 286-295.
- Beck, N., & Katz, J. N. (1995). What to do (and not to do) with time-series cross-section data. *American Political Science Review*, 89, 634-647.
- Becker, G. (1983). A theory of competition among pressure groups for political influence. *Quarterly Journal of Economics*, 98, 371-400.
- Borner, S., Brunetti, A., & Weder, B. (1995). *Political credibility and economic development*. London: St. Martin's.
- Buchanan, J. M., Tollison, R. E., & Tullock, G. (Eds.). (1980). *Towards a theory of the rent-seeking society*. College Station: University of Texas A&M Press.
- Clague, C., Keefer, P., Knack, S., & Olson, M. (1999). Contract-intensive money: Contract enforcement, property rights, and economic performance. *Journal of Economic Growth*, 4, 185-211.
- Davidson, R., & Mackinnon, J. C. (1993). *Estimation and inference in econometrics*. Oxford, UK: Oxford University Press.
- Easterly, W., & Levine, R. (1997). Africa's growth tragedy: Policies and ethnic divisions. *Quarterly Journal of Economics*, 112, 1207-1250.
- Freedom House. (2000). *Annual survey of freedom scores, 1972-73 to 1999-00*. Retrieved from <http://freedomhouse.org/ratings/index.htm>
- Gasiorowski, M. J. (2000). Democracy and macroeconomic performance in underdeveloped countries: An empirical analysis. *Comparative Political Studies*, 33, 319-349.
- Gleditsch, K. S. (2002). *All international politics is local: The diffusion of conflict, integration, and democratization*. Ann Arbor: University of Michigan Press.
- Greene, W. H. (1997). *Econometric analysis* (3rd ed.). New York: Macmillan.
- Gurr, T. R., & Jagers, K. (1999). *Polity 98 project. Regime characteristics 1800-1998* [Computer file]. Ann Arbor: University of Michigan.
- Hall, R., & Jones, C. I. (1998, May). *Why do some countries produce so much more output per worker than others?* (NBER Working Paper 6564). Cambridge, MA: National Bureau of Economic Research.
- Heston, A., Summers, R., & Aten, B. (2002, October). *Penn World Table Version 6.1*. Philadelphia: Center for International Comparisons at the University of Pennsylvania.
- Lake, D. A., & Baum, M. A. (2001). The invisible hand of democracy: Political control and the provision of public services. *Comparative Political Studies*, 34, 587-621.
- Leblang, D. A. (1997). Political democracy and economic growth: Pooled cross-sectional and time-series evidence. *British Journal of Political Science*, 27, 453-472.
- Lipset, S. M. (1959). Some social requisites of democracy: Economic development and political legitimacy. *American Political Science Review*, 53, 69-105.
- Maddison, A. (1987). Growth and slowdown in advanced capitalist economies: Techniques of quantitative assessment. *Journal of Economic Literature*, 25, 649-698.
- Mankiw, G. N., Romer, D., & Weil, D. N. (1992). A contribution to the empirics of economic growth. *Quarterly Journal of Economics*, 107, 407-37.

- McGuire, M., & Olson, M. (1996). The economics of autocracy and majority rule: The invisible hand and the use of force. *Journal of Economic Literature*, 34, 72-96.
- Mokyr, J. (1990). *The lever of riches: Technological creativity and economic progress*. Oxford, UK: Oxford University Press.
- Munck, G. L., & Verkuilen, J. (2002). Conceptualizing and measuring democracy: Evaluating alternative indices. *Comparative Political Studies*, 35, 5-34.
- North, D. C. (1981). *Growth and structural change*. New York: Norton.
- North, D. C., & Weingast, B. (1989). Constitutions and credible commitments. *Journal of Economic History*, 49, 802-32.
- Olson, M. (1982). *The rise and decline of nations: Economic growth, stagflation, and social rigidities*. New Haven, CT: Yale University Press.
- Olson, M. (2000). *Power and prosperity: Outgrowing communist and capitalist dictatorships*. New York: Basic Books.
- Persson, T., & Tabellini, G. (2000). *Political economics: Explaining economic policy*. Cambridge, MA: MIT Press.
- Pritchett, L. (1997). Divergence, big time. *The Journal of Economic Perspectives*, 11, 3-17.
- Przeworski, A., Alvarez, M. E., Cheibub, J. A., & Limongi, F. (2000). *Democracy and development: Political regimes and well-being in the world, 1950-1990*. New York: Cambridge University Press.
- Przeworski, A., & Limongi, F. (1993). Political regimes and economic growth. *The Journal of Economic Perspectives*, 7, 51-69.
- Rodrik, D. (1997). The paradoxes of the successful state. *European Economic Review*, 41, 411-442.
- Rodrik, D. (2000). Institutions for high quality growth: What they are and how to acquire them. *Studies in Comparative International Development*, 35, 3-31.
- Sirovy, L., & Inkeles, A. (1991). The effects of democracy on economic growth and inequality: A review. In A. Inkeles (Ed.), *On measuring democracy: Its consequences and concomitants* (pp. 47-68). New Brunswick, NJ: Transaction.
- Solow, R. M. (1956). A contribution to the theory of economic growth. *Quarterly Journal of Economics*, 70, 65-94.
- Vanhanen, T. (2000). A new dataset for measuring democracy, 1810-1998. *Journal of Peace Research*, 37, 251-265.
- Wacziarg, R. (2001). *Human capital and democracy*. Unpublished manuscript, Stanford Graduate School of Business.
- Wade, R. (1990). *Governing the market: Economic theory and the role of government in East Asian industrialization*. Princeton, NJ: Princeton University Press.
- Ward, M. D., O'Loughlin, J., Cohen, J. S., Gleditsch, K. S., Brown, D. S., Reilly, D. A., et al. (1998). The diffusion of democracy, 1946-1994. *Annals of the Association of American Geographers*, 88, 545-574.
- Wittman, D. (1989). *The myth of democratic failure: Why political institutions are efficient*. Chicago: University of Chicago Press.
- World Bank. (1997). *World tables of economic and social indicators, 1950-1992* [Computer file]. Washington, DC: World Bank, International Economics Department.
- World Bank. (2001). *World development indicators* [CD-ROM]. Washington, DC: Author.
- Young, A. (1995). The tyranny of numbers: Confronting the statistical reality of the East Asian growth experience. *Quarterly Journal of Economics*, 110, 641-680.

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