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The Political Economy of Growth: A Critical Survey of the Recent Literature

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This article reviews the recent literature on the political economy of growth, focusing on the research that has developed at the intersection of the endogenous growth literature and the new political economy. It explores the relationships among four key variables: economic growth and capital accumulation, political instability, political freedom and democratic institutions, and income inequality.

Two of the most active fields in economics in the past few years have been growth theory and political economy. Empirical and policy questions motivate both lines of research. The growth literature, with its new endogenous growth theories, analyzes economic factors such as education, openness, infrastructure, and government spending to determine which are more important or less important for growth. The political-economy literature argues that economics alone cannot fully explain the enormous variance across countries in growth and, more generally, in economic outcomes and policy choices. Political-economy models begin with the assertion that economic policy choices are not made by social planners, who live only in academic papers. Rather, economic policy is the result of political struggle within an institutional structure. The empirically oriented researcher and the policy adviser have to be well aware of how politics influences policymaking.

This article reviews the recent literature that has grown at the intersection of these two very active areas of research. Specifically, we analyze what we have learned and what puzzles are left unsolved in the area of the sociopolitical determinants of growth. We focus on the relationships among four key variables: economic growth and capital accumulation, political instability, political freedom and democratic institutions, and income inequality.[1]

1. For a more extensive, more technical, and less policy-oriented discussion of some of the same issues, see Alesina and Perotti (1994b).

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Both political scientists and economists have devoted decades to the study of these interactions (see Huntington 1968 and Hibbs 1973). We do not attempt to offer a comprehensive review of this literature. For more comprehensive surveys see Adelman and Robinson (1988) on income distribution and growth, and Roubini (1990) on democracy and growth. We focus on the more recent research efforts in this area. Several recent papers have investigated various links among subsets of the variables listed above: income distribution and growth; political instability and growth; political rights, democracy, and growth; and savings, investment, and political instability. By taking a more systematic view of the interactions among the variables, this article attempts to clarify how all these contributions to the literature fit together.

Section I discusses whether democratic institutions and, more generally, political rights foster or hinder economic growth. Section II discusses the relation between political instability and growth. The two key issues are how to define and measure political instability and how to account for the fact that neither of the two variables is exogenous to the other. Section III reviews the basic insights of several recent papers that have argued that income inequality is harmful for growth and reviews several theories linking income inequality and growth. Section IV discusses the empirical evidence on the effects of inequality on growth, in particular, whether or not the evidence can distinguish between alternative theories.

I. Democracy and Growth

Do democracies grow faster than dictatorships? Do the noneconomic benefits of democratic institutions and civil liberties come at the price of low growth, or do civil liberties and democratic institutions foster economic development?

To answer these questions, we need to make a distinction between two, related definitions of democracy. The first identifies a democracy as a nation with regular, free, competitive (multiparty) elections. The second focuses on the amount of civil and economic liberties available to the population. The two definitions are not identical. In fact, some dictatorships that are certainly undemocratic according to the first criterion grant a fair amount of individual, and especially economic, rights to their citizens. The "four dragons" in Southeast Asia (Hong Kong, the Republic of Korea, Singapore, and Taiwan, China) are a good example.

Consider the first definition of democracy. Why should free, multiparty competition negatively influence growth? Perhaps with political freedom various pressure groups have a voice in the political arena. Their demands for redistributive policies may imply legislative deadlocks. Or their demands may be resolved by increasing the size of the government, in particular, the size of distributive programs rather than of productive expenditure. Furthermore, democratic institutions may be slow in responding to external shocks. Finally, in their efforts to

be reelected, incumbent politicians may engage in suboptimal and shortsighted policies.[2]

Each of these arguments, however, has a rebuttal. Even dictators need to please various constituencies to avoid being overthrown (Ames 1987). Redistributive struggles between various socioeconomic groups can occur in various forms even without democratic institutions. In fact, where there is no constitutional way to change leaders, political change often requires violence and disruption of market activities. Thus, other things being equal, there seems to be no obvious correlation between democracy and growth.

The recent empirical literature on this point is fairly unanimous in finding inconclusive results. Controlling for the economic determinants of growth, democracy has no effect on growth, either positive or negative. This result appears in several papers that have looked at cross-country regressions. Helliwell (1992), the most recent detailed study using this definition of democracy, reports inconclusive results. Alesina and others (1992) and Alesina and Rodrik (1994) report similar findings.

The explanation for these inconclusive results is that the (large) group of dictatorships is not homogeneous at all: several dictatorships (particularly in Southeast Asia) have done rather well in terms of growth; many others (particularly in Africa and Latin America) have done much less well. By contrast, the group of democracies is more homogeneous: the democracies have done much better than the worst dictatorships but not as well as some of the most successful dictatorships.

The group of dictatorships may be disaggregated by differentiating the truly kleptocratic ones from the more benevolent. The truly kleptocratic dictatorships include those rulers who have aimed at maximizing their personal wealth and the welfare of their clan and close supporters and have to a large extent disregarded social welfare. The more benevolent dictatorships include the dictators who have followed policies favorable to the socioeconomic development of their countries. The problem of this exercise, of course, is that it becomes close to a tautology: growth is high in dictatorships that enhance growth and low in dictatorships that follow suboptimal policies.

The pattern of correlations among democracy, income, and education raises the additional problem of difficulties in disentangling cause and effect (see Helliwell 1992). Table 1 reports sample means for variables measuring democracy, the rate of growth of gross domestic product (GDP), and education for selected groups of countries. It is quite clear from the table that democracy, GDP per capita, and education are highly correlated: rich countries are democratic and have high levels of education.

2. On pressure groups and lobbying, see Krueger (1974), Bhagwati (1982), and Mueller (1979). On fiscal deadlocks, see Alesina and Drazen (1991), and Spolaore (1993). For a survey of political business cycle models, see Alesina (1994). For a survey of models of budget deficits which, among other things, emphasize fiscal deadlocks, see Alesina and Perotti (1994a).

Table 1. *Democracy, Growth in GDP, and Primary Education in Selected Groups of Countries, 1960–82*

Variable	*All countries*	*Latin America*	*Africa*	*Asia*	*Industrial countries*	*Developing countries in Europe*[a]
Democracy[b]	2.24	2.18	2.83	2.33	1.07	2.33
Rate of growth of per capita GDP (average annual percent)	0.024	0.022	0.015	0.033	0.029	0.041
Primary school enrollment rate, 1960 (percentage of school-age children)	0.827	.963	.625	.826	1.020	0.995
Per capita GDP in 1960	2,626	2,170	881	3,379	6,021	1,879
Number of countries	113	24	41	21	21	6

Note: The regional breakdowns use the IMF coding system.

a. Cyprus, Greece, Malta, Portugal, Turkey, and Yugoslavia.

b. A dummy variable that takes the value 1 for democratic regimes, 2 for regimes mixing democratic and authoritarian features, and 3 for authoritarian regimes.

Source: Alesina and others (1992); Banks (various issues).

The second definition of democracy does not focus only on elections; rather, it focuses more generally on civil and economic rights. The most widely used index of civil liberties is the Gastill index, which ranks countries in seven groups. As with the first definition of democracy, arguments can be made that are consistent with either a positive or a negative correlation between civil liberties and growth. On the one hand, economic liberty fosters entrepreneurship, market activities, and growth. On the other hand, more civil liberties may translate into more conflicts over distribution. Results by Barro (1991) and Ozler and Rodrik (1992) suggest that, in fact, civil liberties are conducive to growth and capital accumulation.

Measures of restrictions on capital mobility, trade restrictions, or other measures of economic regulations can be used as indicators of economic rights. It is straightforward to argue that less regulation and fewer obstacles to individual market activities should spur growth. For instance, the black-market premium could be a proxy for economic freedom. The problem with these concepts of economic liberty, however, is that the results obtained by using them are virtually undistinguishable from statements such as "economic inefficiencies are bad for growth." It is not completely clear whether these results on economic freedom imply something other than the fact that economic inefficiencies are not conducive to growth.

In summary, there is no evidence that, on average, a democracy with civil liberties is costly in terms of economic development. If anything, it may be the other way around, that a democracy with civil liberties promotes economic development. This result is encouraging in view of the democratization process that has swept the world in the past decade, not only in Eastern Europe but also

in large parts of the developing world. But establishing democratic institutions is not the "deus ex machina" that resolves all the problems of development. A sound and stable political-economic climate is essential.

II. Political Instability and Growth

Quantitative studies of the relation between political instability and growth have to tackle two major issues. The first is how to define political instability. The second is how to deal with joint endogeneity. Does political stability foster growth? Or does growth foster political stability? Or do political stability and growth reinforce each other?

Researchers have defined and measured political instability in two ways. The first way uses an index of sociopolitical unrest that summarizes several indicators of more or less violent forms of political protest and social violence. The second way focuses on executive turnover, namely, on the frequency of government collapses.

The first measure, which we label the sociopolitical instability (SPI) approach, begins with a list of variables that identify events such as riots, political demonstrations against the government, and assassinations (see Taylor and Jodice 1983 and Banks various issues). The researcher must then construct an aggregate index that projects in one dimension this multitude of variables. A statistical technique that leads to this type of reduction from a multidimensional set of variables to a single one is the method of principal components. The classic reference for this approach is Hibbs (1973). In his large multiequation study, Hibbs finds that political instability has no effects on growth. Venieris and Gupta (1986) use the method of principal components to construct an SPI index and show that SPI has a negative effect on the saving rate. However, the index of sociopolitical instability they use has some serious problems. One of the components of their index is a dummy variable for democratic regimes. The weight of this democracy variable is so large that the SPI index is almost totally dominated by a classification of countries in the democracy or nondemocracy categories.

Using measures similar to those of Venieris and Gupta, Ben-Habib and Spiegel (1992) argue that sociopolitical instability reduces investment. However, their empirical results are not very strong.

The concept of SPI has proven quite powerful in explaining other phenomena, especially in developing countries. For example, Ozler and Tabellini (1992) show that more instability leads to an increase in external debt in developing countries. Rather than constructing a specific index, Barro (1991) adds two political variables—the frequency of coups d'etat and the number of political assassinations—in his cross-sectional growth regressions and finds that they negatively influence growth. Easterly and Rebelo (1993) find similar results.

The second approach to modeling political instability focuses on executive turnover. This executive instability approach begins by using probit regressions to estimate the propensity of a government to collapse. The independent vari-

ables in these regressions are political variables (protests, riots, executive reshuffling), economic variables (past growth, inflation), and institutional variables (whether the country is a democracy or not, the type of electoral system). A high estimate of the probability of a change of government is viewed as an indicator of executive instability.

Before executive turnover was applied in the growth literature, Cukierman, Edwards, and Tabellini (1992) had used this measure of instability in regressions where the dependent variable is inflation. They conclude that political instability increases inflation. Edwards and Tabellini (1991) pursue this line of research further and show that executive instability leads to myopia in fiscal policy decisions in that unstable executives borrow more heavily than stable ones. Goodrich (1991) finds that in developing countries foreign direct investments are negatively affected by this measure of executive instability.

An important problem that many of these contributions do not formally address is the joint endogeneity of political instability and growth or inflation (exceptions are Hibbs 1973 and Gupta 1990). Economic variables such as growth and inflation can explain the propensity of government changes, which, in turn, are used as an explanatory variable for economic outcomes. Clearly, problems of simultaneity and reverse causality abound.

Londregan and Poole (1990), using results by Heckman (1978), suggest a clever way of dealing with these problems. They estimate a two-equation model. One equation is a probit regression where the dependent variable captures the occurrence of coups d'etat. The dependent variable in the second equation is growth in per capita income. Londregan and Poole find that poverty and, to some extent, low growth increase the likelihood of coups. Furthermore, coups d'etat are persistent in that past coups increase the likelihood of future coups. Thus, if a country has a history of coups, it is likely to experience more coups in the future. And, somewhat surprisingly, they find that the propensity to have a coup does not reduce growth. Londregan and Poole (1992) confirm these results using a different sample and estimation techniques.

Alesina and others (1992) adopt Londregan and Poole's (1990) technique but use different specifications for both the growth equation and the executive change equation. First, they control for many more economic determinants of growth. Second, they focus not only on coups but on a broader definition of "government changes," which also includes constitutional changes of the executive. They consider the following as three separate variables: (a) every government change; (b) major changes in government, a subset of changes involving a substantial turnover in the political composition of the executive, that is, major government changes including all the coups plus a fraction of constitutional major cases of government changes (see Alesina and others 1992); and (c) coups d'etat. Although Alesina and others (1992) confirm Londregan and Poole's results on the effects of poverty on coups, they find, contrary to Londregan and Poole, that a high propensity to executive instability reduces growth. This result is quite robust and holds in several different specifications of the system. Recent

results by Block-Blomberg (1992) confirm the findings of Alesina and others (1992) on this point.

Tables 2 and 3, taken from Alesina and others (1992), present statistics that highlight the basic results. From table 2, the average frequency of government changes for the sample of all countries is 0.28; that is, governments change on average about every three years. The frequency of major government changes is 0.11, and the frequency of irregular government changes (military coups) is about 0.048. Military coups are most frequent in Latin America (0.078) and Africa (0.057) and practically nonexistent in industrial countries. Latin America has an average frequency of total government changes (0.29) similar to the world average, but it has the highest frequency of major government changes (0.16) and of military coups (0.078) in the world.

In Africa, total government changes (and in particular nonmajor ones) are quite unlikely. African countries are typically authoritarian regimes with very few regular elections and changes in power. Executive changes mostly take the form of major changes (0.11), of which military coups are more than half (0.06). Finally, in Asia, government changes are close to the world average (0.30), but major government changes are much lower than in any other region. Moreover, with the exclusion of the industrial countries, the frequency of coups is lowest in Asia. These data confirm the view of Asia as a region with authoritarian but stable political regimes.

Table 3 presents the average annual per capita rate of growth of GDP, separately for the years with and without government changes. The rate for all countries in years without government changes is 2.8 percent, but in years with

Table 2. *Democracy, Growth in GDP, and Average Frequency of Changes in Government in Selected Groups of Countries, 1960–82*

Variable	*All countries*	*Latin America*	*Africa*	*Asia*	*Industrial countries*	*Developing countries in Europe*[a]
Change in government	0.28	0.29	0.21	0.30	0.39	0.37
Major changes in government	0.11	0.16	0.11	0.07	0.12	0.16
Military coup	0.048	0.078	0.057	0.040	0.00	0.058
Democracy[b]	2.24	2.18	2.83	2.33	1.07	2.33
Rate of growth of per capita GDP (average annual percent)	0.024	0.022	0.015	0.033	0.029	0.041
World growth rate	0.029	n.a.	n.a.	n.a.	n.a.	n.a.
Number of countries	113	24	41	21	21	6
Number of observations	2,592	552	943	476	483	138

n.a. Not applicable.

Note: The regional breakdowns use the IMF coding system.

a. Cyprus, Greece, Malta, Portugal, Turkey, and Yugoslavia.

b. A dummy variable that takes the value 1 for democratic regimes, 2 for regimes mixing democratic and authoritarian features, and 3 for authoritarian regimes.

Source: Alesina and others (1992); Banks (various issues).

Table 3. *Average Annual Per Capita Growth in GDP in Years with and without Changes in Government in Selected Groups of Countries, 1960–82*
(percent)

Item	*All countries*	*Latin America*	*Africa*	*Asia*	*Industrial countries*	*Developing countries in Europe*[a]
Years without government change						
Growth rate	2.8	2.4	2.0	2.9	3.9	5.2
Number of observations	1,860	393	745	295	340	87
Years with government change						
Growth rate	1.3	1.5	−0.4	2.7	1.7	2.0
Number of observations	739	159	198	188	143	51
Years with major government change						
Growth rate	0.1	0.2	−1.9	2.3	1.4	1.3
Number of observations	299	86	100	57	34	22
Years with coups						
Growth rate	−1.3	−0.6	−2.7	1.3	—	−2.2
Number of observations	125	43	54	20	0	8

— Not available.
Note: The values are average per capita growth rates in country-years in percent.
a. Cyprus, Greece, Malta, Portugal, Turkey, and Yugoslavia.
Source: Alesina and others (1992).

government change, the rate is only 1.3 percent. The difference is even stronger for major government changes, when average annual growth is 0.1 percent. The growth gap is largest and most striking for years with coups, when the average annual country GDP growth rate is −1.3 percent.

The other columns of table 3 show that the same empirical observations are common to every region of the world. Growth is, on average, highest in years with no change, lower in years with government change, still lower in years with major change, and lowest in years with coups. Note, however, that in years with coups, growth is substantially higher in Asia than in every other region of the world.

Mauro (1993) and Knack and Keefer (1993) use another measure of political instability: subjective indexes collected by private organizations that are monitoring countries. These indexes are typically used by international investors to evaluate country risk. Both Mauro and Knack and Keefer report that instability has negative effects on investment and growth. They also find that subjective indexes of corruption and the quality of bureaucracy are negatively associated with growth. One problem is that measures of corruption are highly correlated with measures of instability. Whether or not these subjective measures provide

any additional information beyond actual observations of sociopolitical variables remains to be seen.

In summary, the following picture emerges. Poor countries are sociopolitically unstable. Since political instability reduces the incentives to save and invest and therefore reduces growth, poor countries may fall into a vicious circle. They are unstable because they do not manage to become rich, and they do not manage to become rich because they are politically unstable.

A somewhat different view has been put forward by Huntington (1968), who concentrates on the causal link from growth to sociopolitical instability. He argues that it is not always true that all good things go together. When poor countries experience a period of takeoff and rapid growth, social unrest may actually increase. New demands are generated, the process of urbanization accelerates, and the entire society is in turmoil. This is not in general true for those rich countries that, for some reason, experience a period of high growth. Rich countries, unlike poor ones, already have the institutions in place to cope with social and economic transformations. Therefore, according to Huntington, the relation between instability and growth is nonlinear, and its sign depends on the level of development. It is positive for poor economies and negative for richer economies.

The results of this section and the previous section lead to two interesting observations. First, growth is influenced not so much by the nature of the political regime (democracy or dictatorship) as by the stability of the political regime. Second, transitions from dictatorship to democracy, being associated with sociopolitical instability, should typically be periods of low growth. The social demands that were repressed under unconstitutional rule are likely to explode at the beginning of a new democratic regime. Until the new democratic regime is consolidated, it may face tremendous pressure to accommodate the conflicting demands of different groups.

In addition, collapsing dictatorships are likely to bequeath to their successors serious economic problems for two reasons. First, poor economic performance is likely to be one of the causes of the collapse of the old regime. Second, collapsing dictators may follow very shortsighted policies because they have no future in office. Haggard, Shariff, and Webb (1990) and Haggard and Kaufman (1989) document that countries in transition perform worse in terms of many economic indicators than either established democracies or strong (established and not-collapsing) dictatorships.

III. Income Distribution and Growth: Theory

Starting from the theories of Kuznets and Kaldor, the development economics literature has hotly debated the relation between income distribution and growth (for a survey, see Adelman and Robinson 1988). Recent contributions to the literature are characterized by their close connection with the new theories of endogenous growth and a focus on previously neglected links from income distribution to growth, rather than from growth to income distribution.

In what follows, we concentrate on political links from income distribution to growth. There are, however, important nonpolitical links. One purely economic link pointed out by Murphy, Shleifer, and Vishny (1989) is that income distribution can influence growth by affecting the size of domestic demand and, as a consequence, the potential for industrialization. Another nonpolitical channel stresses the role of imperfect capital markets. In perfect capital markets, anyone could borrow for education against expected future earnings. However, with imperfect capital markets, imperfect information about individual abilities and imperfect enforcement of loans severely restrict the option of borrowing for education. Thus, most people heavily rely on their own resources to invest in education, and the initial distribution of personal resources determines how many agents can invest and, as a consequence, the resulting rate of growth of the economy. Important contributions to this line of research are Galor and Zeira (1993), Banerjee and Newman (1991), and Aghion and Bolton (1991).

Three political channels link income inequality and growth. In the first political channel, the distribution of resources is linked to large incentives for the poor to engage in rent-seeking activities, which hinder investments and growth (Ben-Habib and Rustichini 1991). Fay (1993) shows that the more unequal the distribution of income, the larger the number of people who engage in illegal activities that pose a threat to property rights. In what follows, however, we focus more on the second and third political channels: the fiscal channel and the political instability channel.

In the fiscal channel, the level of government expenditure and taxation is the result of a voting process in which income is the main determinant of a voter's preferences; in particular, poor voters will favor a high level of taxation. This line of research generalizes the static models of voting on the tax rate by Romer (1975), Roberts (1977), and Meltzer and Richard (1981) to a dynamic context. The poor will either pay a lower share of taxes or will disproportionately benefit from government spending. In a society with income inequality, thus with many poor agents, the majority of voters will vote for high taxation, which will discourage investment and therefore growth.

Alesina and Rodrik (1994), Bertola (1993), and Persson and Tabellini (1991) are three contributions in the literature on the fiscal channel. Despite some differences in the specifics of the models, these three papers share a common structure. Each consists of an economic mechanism and a political mechanism (for a more complete survey of these models, see Perotti 1992). The former describes the effects of fiscal policy on growth. The latter describes how income distribution determines fiscal policy (taxes and government expenditure) through the voting process.

The papers differ in the type of government expenditure they consider: public investment (Alesina and Rodrik), redistribution from capital to labor (Bertola), and purely redistributive transfers (Persson and Tabellini). The common element is that whenever the share of government expenditure in GDP rises, the accompanying increase in taxation reduces the after-tax marginal product of capital

that can be appropriated by private investors. This reduces the rate of accumulation of capital and therefore growth. The distribution of initial resources comes into play because it helps explain how these types of government expenditures are determined.

In Alesina and Rodrik (1994), the key distributional variable is the relative share of labor endowment and capital endowment, which is monotonically related to the distribution of income. The economic mechanism is that public investment is financed by proportional taxation of capital income. Therefore, when taxes increase in order to finance more public investment, the after-tax return from private capital investment decreases. This effect tends to decrease the rate of investment and therefore the rate of growth of an economy. The political mechanism is that the higher the proportion of capital income in an individual's total income (or, equivalently, the higher the individual's total income), the higher the price the individual has to pay for the benefits of public investment and therefore the lower the individual's preferred tax rate. According to the median voter theorem, when agents vote on the tax rate, the level of taxation preferred by the median agent in the distribution of resources will prevail over all the other proposed tax rates.

Combining the economic and the political mechanisms, the higher the proportion of capital income to total income of the median voter, the lower the tax rate chosen by the voting process and the higher the rate of investment and growth. In terms of income distribution, the poorer the median voter in relation to the voter with average income, the higher the equilibrium tax rate and the lower the growth rate. Therefore, the model of Alesina and Rodrik (1994) implies an inverse relationship between growth and inequality in income or wealth.

Bertola (1993) also focuses on the functional distribution of income, but the economic mechanism is different. Revenues from taxation are used for redistribution, not for infrastructure investment. Capital income is taxed, and the proceeds are directly redistributed to agents who derive their income from labor. The effect of a higher level of taxation is then similar to the Alesina and Rodrik model. The higher level of taxation decreases the after-tax marginal product of capital that an investor can appropriate and therefore decreases investment and growth. The political mechanism is also similar to that of Alesina and Rodrik. The higher the proportion of capital income to labor income, the more an individual has to lose from a proportional tax rate on capital that is redistributed to the individual in proportion to the individual's labor income. Thus, the tax rate that prevails through the voting process is again a negative function of the wealth-labor ratio of the median voter. Combining the two mechanisms yields the same reduced-form prediction as in Alesina and Rodrik. The higher the wealth-labor ratio of the median voter, the higher the rate of growth of the economy. This can be translated into the testable prediction that there should be a positive association between the income of the median voter and the rate of growth of the economy.

Persson and Tabellini (1991) also analyze the effects of redistributive policies, but they focus on redistribution from rich agents to poor agents rather than from capital to labor. The relevant concept is the distribution of personal income. In the economic mechanism, agents work and invest in human capital. Taxes are proportional to income, and the revenues are redistributed lump-sum to all agents. Again, higher taxes discourage investment in human capital and therefore reduce growth. As to the political mechanism, because taxes are redistributed lump-sum, poor voters pay a relatively small amount in taxes but receive the same benefits as rich voters. This means that the tax rate favored by an individual is inversely related to the individual's income. When preferences are aggregated through the voting process, the implication is that the poorer the median voter relative to the average, the higher the tax rate and again the lower the rate of investment and growth.

Perotti (1993b) and Saint-Paul and Verdier (1991) study the effects of income distribution on growth in a similar manner. In both papers the agents vote on the level of government expenditure, and growth is driven by the accumulation of human capital, but the mechanisms in the two papers are different. In Perotti, individuals vote on the level of purely redistributive transfers that determine the post-tax income of the agents of the economy and therefore who can privately invest in education. In turn, this determines the rate of accumulation of human capital. In Saint-Paul and Verdier, agents vote on public expenditure on education, which is the channel through which income distribution affects the accumulation of human capital.

The third political mechanism linking income distribution and growth, the instability channel, emphasizes the effect of income inequality on social unrest. This hypothesis stresses two links. The first link is from income distribution to political instability, and the second link is from political instability to growth. A large group of impoverished citizens, facing a small and very rich group of well-off individuals, is likely to become dissatisfied with the existing socioeconomic status quo and demand radical changes. As a result, mass violence and illegal seizures of power are more likely the more unequal the distribution of income is.

The idea is that income inequality is an important determinant of sociopolitical instability. Countries with more unequal income distribution are more politically unstable. In turn, as argued in the preceding section, sociopolitical instability has adverse effects on growth. The instability channel is certainly not a novelty (see, for instance, Huntington 1968); however, Alesina and Perotti (1993) have formulated this hypothesis in a quantitatively testable way (see also Gupta 1990).

In summary, the fiscal and political instability channels imply that income inequality is an obstacle to growth. Both channels have the same reduced-form implications. They both imply that after controlling for other determinants of growth, in a cross-section growth regression, the measure of income inequality should have a negative coefficient. The interpretation of this coefficient, however, depends on which channel is used.

IV. Income Distribution and Growth: Some Evidence

The reduced-form regressions in Alesina and Rodrik (1994) and Persson and Tabellini (1991) show an inverse relationship between income inequality and growth. Table 4 presents an example of the results from this kind of regression. The two measures of the distribution of income and wealth are the Gini coefficient of income and the Gini coefficient of land distribution. (Other and more comprehensive measures of wealth are not available for a sufficiently large number of countries.) Both variables are measured on or around 1960. The theory implies that initial income distribution affects subsequent growth; in turn, growth may also influence the evolution of income distribution. The three samples of countries refer to two different data sets for the Gini coefficient of income and another for the Gini coefficient of land distribution (see Alesina and Rodrik 1994 for more details).

Table 4. *Income Distribution and Growth in Sample Groups of Countries, 1960–82*

	High-quality sample (46 countries)	*Largest-possible sample (70 countries)*	*Largest-possible sample*			
			(49 countries)	*(41 countries)*		
Variable	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Constant	3.60	1.76	3.71	6.22	6.24	6.21
	(2.66)	(1.50)	(3.86)	(4.69)	(4.63)	(4.61)
GDP in 1960	−0.44	−0.48	−0.38	−0.38	−0.39	−0.38
	(−3.28)	(−3.37)	(−3.61)	(−3.25)	(−3.06)	(2.95)
Primary school enrollment rate, 1960	3.26	3.98	3.85	2.66	2.62	2.65
	(3.38)	(4.66)	(4.88)	(2.66)	(2.53)	(2.56)
Gini coefficient of income, 1960	−5.70	−3.58		−3.47	−3.45	−3.47
	(−2.46)	(−1.81)		(−1.82)	(−1.79)	(−1.80)
Gini coefficient of land distribution, 1960			−5.50	−5.23	−5.24	−5.21
			(−5.24)	(−4.38)	(−4.32)	(−4.19)
Interactive term between democracy and land distribution[a]					0.12	
					(0.12)	
Democracy[b]						0.02
						(0.05)
$\bar{R}^2$	0.28	0.25	0.53	0.53	0.51	0.51

Note: Ordinary least squares was used. The dependent variable is average per capita growth rate during 1960–85. t-statistics are in parentheses.

a. Combines democracy with the Gini coefficient on land distribution.

b. A dummy variable that takes the value 1 for democratic regimes, 2 for regimes mixing democratic and authoritarian features, and 3 for authoritarian regimes.

Source: Alesina and Rodrik (1994).

The negative coefficients on the two Gini variables are consistent with the theory that more inequality reduces growth. The other control variables, GDP in 1960 and the primary school enrollment rate in 1960, are standard in the growth literature, and their coefficients have the expected sign and order of magnitude. They indicate that there is a certain amount of conditional convergence and that human capital increases growth.

The fifth column in table 4 adds an interactive term for democracy and the Gini coefficient on land distribution.[3] This term is meant to capture an additional implication of the fiscal channel, which emphasizes voting as the mechanism that links inequality to fiscal policy to growth. Because the theory relies on voting, it should be particularly applicable to democracies, and less so to dictatorships. The insignificant coefficient on this interactive term suggests that in this respect there is no difference between the two types of regimes. One interpretation of this result is that the fiscal channel with its voting mechanism is rejected by the evidence. The second, and more reasonable, interpretation is that the concept of voting in these models should not be interpreted too literally. To put it differently, the pressure for fiscal redistributions arising from a large impoverished majority of citizens affects not only democratically elected representatives, but, also, to some extent, dictators.

Clarke (1993) finds that the effect of inequality on growth is robust across different measures of inequality and different specifications of the growth regression. He also generally finds no differences in the effects of inequality in democracies and dictatorships. Easterly and Rebelo (1993) present similar results, also reporting no significant differences between democracies and nondemocracies.

Persson and Tabellini (1991) use a different data set and somewhat different specifications and also find that inequality is harmful to growth. They also find, however, that, in their sample and with their data, the effect of inequality on growth is stronger in democracies than in nondemocracies. The latter result is directly supportive of the fiscal and voting channel; however, the robustness of the result is rather unclear.

In summary, there is relatively robust evidence that initial income inequality and subsequent growth are inversely related. The next step is a more precise investigation of which channel links these two variables.

An investigation of the fiscal channel requires introducing a fiscal policy variable, which is influenced by income distribution and which, in turn, affects growth. The difficulty in pursuing this analysis is that the redistributive policy instruments may vary across countries and time periods. In some cases, progressive taxation of labor income is the instrument; in other cases, the composition of government spending; and still in others, trade policy. It may be hopelessly restrictive to focus on one specific policy tool to test these models of

3. Note that Alesina and Rodrik (1994) define their democracy variable as a zero-one dummy variable; the variable in the table is thus slightly different from the one discussed previously in this article.

income distribution and growth. Nevertheless, it may be instructive to study the transmission mechanism from income distribution to growth, while keeping in mind that all the results have to be evaluated considering the important caveats above.

Perotti (1993a) and Alesina and Perotti (1994b) consider the fiscal variable "transfers" as the link between income distribution and growth. Perotti (1993a) estimates a system of two equations where the dependent variables are transfers and growth (or private investment). A measure of income inequality (in addition to other controls) is introduced in the transfer equation. Thus the key coefficients are those of income inequality on transfers and those of transfers on growth.

The results are rather disappointing for the theory. The two coefficients are generally insignificant and have the wrong sign. These inconclusive results hold both for democracies only and for the entire sample of countries. Sala i Martin (1992) also finds that transfers are positively rather than negatively associated with growth.

Perhaps these disappointing results arise from the fact that direct transfers are not the only or even the most important channel through which redistribution occurs. The composition of public expenditure in different programs, the degree of progressivity of the tax system, and the relative shares of income taxes and property taxes are only a few of the many channels that fiscal redistributions can take. Easterly and Rebelo (1993) address some of these issues, and some of their results are more consistent with the models by Alesina and Rodrik (1994), Persson and Tabellini (1991), and Bertola (1993) than with Perotti's evidence on transfers.

For instance, Easterly and Rebelo find that in a large sample of countries for the period 1970–88, income inequality before 1970 was associated with higher income taxes and more publicly provided education. Thus, public education might be the channel through which income inequalities are mitigated. In the Alesina and Rodrik model, in fact, redistribution can occur through an increase in the (productive) role of government, which raises labor productivity and therefore the real wage. Easterly and Rebelo's results could be interpreted as an indication that public education is, in fact, an operative channel. Engen and Skinner (1992) present another piece of evidence that is consistent with the direction of the effects of fiscal policy in the Alesina and Rodrik model. They find that after correcting for problems of endogeneity of fiscal policy in a sample of 107 countries for the period 1970–85, a balanced budget increase in government spending and taxation reduces growth.

In summary, the evidence is inconclusive on the fiscal channel. There are some positive and some negative results. A more systematic and comprehensive research effort on the fiscal channel is needed.

Alesina and Perotti (1993) have explicitly investigated the instability channel. They construct an index of sociopolitical instability by applying the method of principal components to the following variables: the number of politically moti-

vated assassinations, the number of people killed in conjunction with phenomena of domestic mass violence, the number of successful coups, the number of attempted but unsuccessful coups, and a dummy variable that identifies democracies.

The variables for assassinations and the number of people killed capture phenomena of mass violence as well as violent and illegal forms of political expression. The variables for successful and unsuccessful coups capture illegal and violent transfers of executive power, successful or attempted. The dummy variable for democracy is included mainly because of reporting problems. In most dictatorships the government controls the press and restricts the diffusion of information, particularly abroad; thus, for propaganda reasons, measures of sociopolitical unrest are likely to be underreported. The inclusion of the dummy variable for democracy is also advisable because dictatorships are much more prone to be overthrown by extremists than are stable democracies. That is, for the same level of observed political violence, the likelihood of a violent, unconstitutional overthrow of the government with a breakdown of legality is higher in a dictatorship.

Alesina and Perotti (1993) obtain an index of sociopolitical instability, SPI, which is a linear combination of the above-mentioned variables, with weights given by the principal components method. The computed index appears reasonable, and none of the individual components has an overwhelming weight. The SPI index is related, but far from identical, to other indexes recently proposed by Venieris and Gupta (1986) and Gupta (1990).

Alesina and Perotti (1993) then estimate a system of equations in which the two left-hand variables are the SPI index and investment. Table 5 reports a typical example of these estimates. The authors discuss in more detail the specification of the two-equation system and the identifying assumptions. The specification of the investment equation heavily draws on Barro (1991).

The two critical coefficients are those of the middle class variable (the share of income of the third and fourth quintiles of the population in GDP in 1960) in the SPI equation and of the SPI variable in the investment equation. For both coefficients the sign is consistent with the theory, and both coefficients are statistically significant at conventional levels. The magnitude of these coefficients is also significant. An increase by one standard deviation of the share of the middle class causes a decrease in the index of sociopolitical instability of about 3.3, which is about one-quarter of the standard deviation of the index. This decrease in the index of political instability in turn causes an increase in the share of investment in GDP of about 1 percentage point.[4] These effects are not negligible; the difference between the highest and lowest value of the middle class variable in the sample is about four standard deviations. An exogenous increase in the SPI

4. The specific system shown in table 5 does not include a dummy for Latin America. When this dummy is included, for some but not all specifications, the coefficient of the middle class variable on SPI becomes insignificant (the t-statistics $t \cong -1.3$). This is because the variable is highly correlated with the regional variable for Latin America. See Alesina and Perotti (1993) for further discussion of this point.

Table 5. *Estimation Results for the Investment and Sociopolitical Instability Equations, 1960–82*

Variable	*Investment equation*	*Sociopolitical instability equation*
Constant	20.75	31.98
	(5.34)	(2.93)
Primary school enrollment rate, 1960	0.09	−0.19
	(2.64)	(−1.78)
Sociopolitical instability index	−0.45	
	(−2.62)	
Deviation of the investment deflator[a]	3.90	
	(0.68)	
Investment deflator in 1960 (U.S. = 1.0)[b]	−12.81	
	(−3.61)	
GDP in 1960		−2.26
		(−1.93)
Middle class share of GDP, 1960[c]		−0.62
		(−2.20)
Ratio of real domestic investment to real GDP, 1960–85 average		0.55
		(1.03)
Asia dummy		−7.78
		(−1.37)
Africa dummy		−8.62
		(−1.94)
s.e.e.	6.30	11.54

Note: The table presents the results of two-stage least squares estimation; t-statistics are in parentheses. Estimates using three-stage least squares are very similar. The sample includes seventy observations.

a. Deviation of the purchasing power parity value for the investment deflator from the sample mean in 1960.

b. Purchasing power parity value of the investment deflator (U.S. = 1.0) in 1960.

c. The share of income of the third and fourth quintiles of the population in GDP in 1960.

Source: Alesina and Perotti (1993).

index by one standard deviation causes a decrease in the share of investment in GDP of about 4 percentage points. All the other coefficients in the two equations are sensible and consistent with previous results (for instance, Barro 1991).

Alesina and Perotti (1993) also show that results favorable to the instability channel are quite robust to changes in the specification of the system of equations and in the specification of the SPI index. For instance, they find very similar results when they use the SPI index proposed by Gupta (1990).[5]

These results have both positive and normative implications. From a positive point of view, they suggest an argument that might help explain different investment and growth performances in different parts of the world. Several countries in Southeast Asia have had very high growth rates in the post–World War II period. In the aftermath of the war these countries had land reforms that re-

5. Gupta's (1990) index is similar to the one constructed by Alesina and Perotti (1993) but includes a larger number of variables. Note that with Gupta's SPI index, the issues concerning the Latin American dummy variable discussed in footnote 4 disappear. The coefficient of the middle class variable remains highly significant even when the Latin American dummy is added in the regression.

duced income and wealth inequality. Furthermore, and perhaps as a result of this reform, these countries have been relatively stable politically, compared with, for example, Latin American countries. The latter, in turn, have had a much more unequal income distribution, more sociopolitical instability, and lower growth rates.

From a normative point of view, these results have implications for the effects of redistributive policies. Fiscal redistribution, by increasing the tax burden on investors, reduces the propensity to invest. However, the same policies may reduce social tensions and, as a result, create a sociopolitical climate more conducive to productive activities and capital accumulation. Thus, by this channel fiscal redistribution might actually spur economic growth. The net effect of redistributive policies on growth has to weigh the costs of distortionary taxation against the benefits of reduced social tensions.

In summary, the instability channel appears to be more successful, at least at this stage, than the fiscal channel. However, before drawing firm policy prescriptions based on these results, more empirical research is needed.

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