DEMOCRACY AND ECONOMIC PERFORMANCE[1]

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Does democracy hurt or help economic performance? There are few questions in political economy that have attracted more attention over the years. Thinking on this subject, in one form or another, goes all the way back to Plato—who favored aristocracy to democracy—and has preoccupied many of the most fertile minds in political philosophy. More recently, with the advent of cross-national data sources and statistical techniques, there have been numerous econometric studies investigating the relationship between political liberties and economic growth.[2]

In policy circles, discussions on this issue inevitably gravitate toward the experience of a handful of economies in East and Southeast Asia, which (until recently at least) registered the world's highest growth rates under authoritarian regimes. These countries constitute the chief exhibit for the argument that economic development requires a strong hand from above. The deep economic reforms needed to embark on self-sustaining growth, this line of thought goes, cannot be undertaken in the messy push and pull of democratic politics. Chile under Pinochet is usually exhibit no. 2.

A systematic look at the evidence, however, yields a much more sanguine conclusion. While East Asian countries have prospered under authoritarianism, many more have seen their

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[2] See in particular Helliwell (1994) and Barro (1996, Lecture II). These two studies are also a good source for citations on the earlier literature. Przeworski and Limongi (1993) is a good introduction to the conceptual issues.

economies deteriorate—think of Zaire, Uganda, or Haiti. Recent empirical studies based on samples of more than 100 countries suggest that there is little reason to believe democracy is conducive to lower growth over long time spans.[3] Neither is it the case that economic reforms are typically associated with authoritarian regimes (Williamson 1994). Indeed, some of the most successful reforms of the 1980s and 1990s were implemented under newly-elected democratic governments—think of the stabilizations in Bolivia (1985), Argentina (1991), and Brazil (1994), for example, or of the Polish transition from socialism.

Should we be agnostic then about the economic implications of democracy? Since civil liberties and political rights have intrinsic value independent of their economic consequences, it is good to know that fledgling democracies do not necessarily face any tradeoffs. But there is more to be said on behalf of democracy.

As I will demonstrate in this paper, democracies perform better than authoritarian regimes in a number of respects which have received scant attention to date. I will show four results in particular:

1. Democracies yield long-run growth rates that are more predictable.
2. Democracies produce greater stability in economic performance.
3. Democracies handle adverse shocks much better.

[3] Helliwell (1994) and Barro (1996) try to control for the endogeneity of democracy in estimating the effect of the latter on growth. Helliwell finds that democracy spurs education and investment, but has a negative (and insignificant) effect on growth when investment and education are controlled. On balance, he finds no "systematic net effects of democracy on subsequent economic growth." Barro finds a non-linear relationship, with growth increasing in democracy at low levels of democracy and decreasing in democracy at higher levels. The turning point comes roughly at the levels of democracy existing in Malaysia and Mexico (in 1994), and somewhat above South Africa's level prior to its transition. A more recent paper by Chowdhurie-Aziz (1997) finds a positive association between the degree of non-elite participation in politics and economic growth. See also Tavares and Wacziarg (1996) who estimate a system of simultaneous equations and find a positive effect of democracy on growth through the channels of enhanced education, reduced inequality, and lower government consumption.

4. Democracies pay higher wages.

The first of these implies that economic life is less of a crap shoot under democracy. The second suggests that, whatever the long-run growth level of an economy, there is less instability in economic outcomes under a democratic regime than there would be under an autocracy. The third finding indicates that the presence of civil liberties and political rights improves an economy's capacity to adjust to changes in the external environment. The final point suggests that democracies produce superior distributional outcomes. Taken together, these results provide a clear message: a risk-averse individual not blessed with a lot of capital—an individual, that is, like most of us—is considerably better off living in a democracy.

The bulk of this paper is devoted to reviewing the evidence. In the concluding section, I will suggest some hypotheses that may help account for the economic superiority of democracy.

Democracy and long-run growth

As I mentioned in the introduction, there does not seem to be a strong, determinate relationship between democracy and long-run growth. A representative scatter plot is shown in Figure 1 for a sample of about 90 countries. The figure shows the partial relationship between a country's level of democracy and its growth rate of GDP per capita during the 1970-89 period, after initial income, education, and the quality of governmental institutions are controlled. Democracy is measured on a scale of 0 to 1, using the Freedom House index of civil liberties and political rights.[4] The slope of the partial regression line is virtually zero.[5]

[4] See Barro (1996) for a discussion of this index and comparison with others.

[5] Introducing a quadratic term in democracy yields the pattern of coefficients found in Barro (1996), but neither term is statistically significant.

Looking at individual cases, it becomes quickly evident why this is so. Among high-growth countries, Taiwan, Singapore, and Korea rank low in terms of democracy, this being the source of the conventional wisdom among policymakers reported above. But some other countries, Botswana and Malta in particular, have done equally well or even better under fairly open political regimes. (Note that the rankings in this figure have to be interpreted relative to the benchmarks established by the presence of the other controls in the regression.) Poor performers can similarly be found at either end of the democracy spectrum: South Africa and Mozambique have done poorly under authoritarian regimes, the Gambia and Jamaica under relatively democratic ones.

Hence mean long-run growth rates tend not to depend on political regime type. A different question is whether democracy is the safer choice in the following sense: is the cross-national variance in long-run growth performance smaller under democracies than it is under autocracies? Since mean growth rates do not differ, a risk-averse individual would unambiguously prefer to live under the regime where expected long-run growth rates cluster more closely around the mean.

I first divide the country sample into two roughly equal-sized groups. I call those with values of the democracy index less than 0.5 "autocracies" (n=48), and those with values greater or equal to 0.5 "democracies" (n=45). The top panel in Table 1 shows the coefficients of variation of long-run growth rates, computed across countries for the 1960-89 period, for the two samples. The first row shows the unconditional coefficients of variation, without any controls for determinants of growth rates. The second row displays the conditional version of the same, where the variation now refers to the unexplained component from a cross national regression (separate for each sample) with the following control variables: initial GDP per capita, initial

secondary school enrollment ratio, and regional dummies for Latin America, East Asia, and sub-Saharan Africa. I find that the coefficient of variation (whether conditional or unconditional) is substantially higher for autocracies than it is for democracies.

Since countries with authoritarian regimes tend to have lower incomes, perhaps this result reflects the greater randomness in the long-run growth rates of poor countries. To check against this possibility, I divided countries differently. First, I regressed the democracy index on income and secondary enrollment levels across countries ($R^2 = 0.57$). Then I regrouped my sample of countries according to whether their actual democracy levels stood below or above the regression line. Countries above (below) the regression line are those with greater (less) political freedoms than would be expected on the basis of their income and educational levels. In the bottom panel of Table 1, these two groups are labeled "high democracy" (n=49) and "low democracy" (n=44) respectively. The coefficients of variation for long-term growth rates are then calculated for each group in the same way as before. Our results remain qualitatively unchanged, although the gap between the two groups shrinks somewhat: the coefficient of variation is smaller in countries with greater political freedoms (where "greater" now refers to the benchmark set by the cross-national regression relating democracy levels to income and education).

The bottom line is that living under an authoritarian regime is a much riskier gamble than living under a democracy.

Democracy and short-term performance

A point similar, but not identical, to the one just discussed was anticipated by Sah (1991), who argued that de-centralized political regimes (and democracies in particular) should be less prone to volatility. The rationale behind this idea is that the presence of a wider range of

decision-makers results in greater diversification and hence less risk in an environment rife with imperfect information. Note that this argument is about short-term volatility in economic performance, and not about the dispersion in long-term growth rates which was the focus of the previous section.

To determine the relationship between regime type and volatility in short-run economic performance, I focus on three national-accounts aggregates: (a) real GDP; (b) real consumption; and (c) investment. (All data are from the Penn World Tables, Mark 5.6.) In each case, volatility is measured by calculating the standard deviation of annual growth rates of the relevant aggregate over the 1960-89 period (more accurately, by taking the standard deviation of the first differences in logs). Then each measure of volatility is regressed on a number of independent variables, including our measure of democracy. The other independent variables included are: log per-capita GDP, log population, exposure to external risk, and dummies for Latin America, East Asia, sub-Saharan Africa, and OECD.

Table 2 shows the results. The estimated coefficient on the measure of democracy is negative and statistically significant in all cases. A movement from pure autocracy (democracy = 0) to pure democracy (=1) is associated with reductions in the standard deviations of growth rates of GDP, consumption, and investment of 1.3, 2.3, and 4.4 percentage points, respectively. These effects are fairly sizable. Figure 2 shows a partial scatter plot which helps identify where different countries stand. Long-standing democracies such as India, Costa Rica, Malta, and Mauritius have experienced significantly less volatility than countries like Syria, Chile, or Iran, even after controlling for country size and external shocks.

Moreover, as the last column of Table 2 shows, causality seems to run directly from regime type to volatility (rather than vice versa). In this column I have used secondary enrollment

ratio as an instrument for democracy (in addition to the other independent variables mentioned earlier). This variable has all the properties of a desirable instrument, as it is well correlated with democracy but virtually uncorrelated with the error term from the OLS regression. With democracy instrumented in this fashion, the estimated coefficient actually doubles in absolute value.

The evidence strongly suggests, therefore, that democracy is conducive to lower volatility in economic performance.

Democracy and resilience in the face of economic shocks

The late 1970s were a watershed for most developing economies. A succession of external shocks during this period left many of them in severe payment difficulties. In some cases, as in most of Latin America, it took almost a decade for macroeconomic balances to be restored and for growth to resume. The question I now pose is whether democratic and participatory institutions helped or hindered adjustment to these shocks of external origin.

The main thing I am interested in explaining is the extent of economic collapse following an external shock. In another paper (Rodrik 1997a), I have explored how social cleavages and domestic institutions of conflict management mediate the effects of shocks on economic performance. Here I focus on the role of democratic institutions specifically.

In a recent review of the growth experience of developing countries, Pritchett (1997) has looked for breaks in trend growth rates. These breaks tend to coalesce around the mid- to late-1970s, with 1977 as the median break year. (See the appendix for data on individual countries.) I use the difference in growth rates before and after the break as my dependent variable.

The basic story in Rodrik (1997a) is that the adjustment to shocks will tend to be worse in countries with deep latent social conflicts and with poor institutions of conflict management. Consequently, such countries will experience larger declines in growth rates following shocks. These ideas are tested by regressing the change in growth on indicators of latent conflict and on proxies for institutions of conflict management (in addition to other variables[6]). Figure 3 displays a sample partial scatter plot, showing the relationship between ethnic cleavages and the growth decline. Controlling for other variables, there is a systematic relationship between these two: countries with greater ethnic and linguistic fragmentation experienced larger declines in economic growth.

Our interest in democratic institutions in this context derives from the idea that such institutions provide ways of regulating and managing social conflicts through participatory means and the rule of law, and hence dissipate the adverse consequences of external shocks. To test this hypothesis, we check to see whether our measure of democracy—this time restricted to the 1970s only, to avoid possible reverse-causality complications—is related to changes in growth rates subsequent to the shocks. The partial scatter plot shown in Figure 4, covering 101 countries, suggests a clear affirmative answer. Countries with greater civil liberties and political rights during the 1970s experienced lower declines in economic growth when their trend growth rate changed. The relationship is highly significant in statistical terms; the t-statistic on the estimated coefficient on democracy is 3.53, with a p-value of 0.001. Figure 5 shows the results when sub-Saharan African countries are excluded from the sample. The reason to exclude these is both

[6] Each regression in this paper includes the following variables on the right-hand side in addition to those specifically discussed: log GDP per-capita in 1975, growth rate prior to break year, measure of external shocks during the 1970s, ethno-linguistic fragmentation (*elf60*), and regional dummies for Latin America, East Asia, and sub-Saharan Africa.

concern with data quality and the possibility that the relationship is driven by a few African countries with extreme values. But the relationship holds just as well in the restricted sample: the partial slope coefficient is virtually unchanged and the t-statistic is almost as high (3.32). As these two figures show, the hardest hit countries tended to be those with few political liberties (relative to what would be expected of countries at their levels of income), such as Syria, Algeria, Panama, and Gabon. Countries with open political regimes, such as Costa Rica, Botswana, Barbados, and India, did much better.

These results are perhaps surprising in view of the common presumption that it takes strong, autonomous governments to undertake the policy adjustments required in the face of adversity. They are less surprising from the perspective articulated above: adjustment to shocks requires managing social conflicts, and democratic institutions are the ultimate institutions of conflict management.

To probe the issues more deeply, I investigate the relationship between declines in growth and three other aspects of political regime: (a) the degree of institutional (de jure) independence of the executive; (b) the degree of operational (de facto) independence of the executive; and (c) the degree to which non-elites can access political institutions. These three variables come originally from the Polity III data (see Jaggers and Gurr, 1995), and have been re-coded on a scale of 0 to 1 for the purposes of the current exercise. As before, I use the averages of the values reported for each country during the 1970s. The appendix lists the underlying data. Note that these three indicators are correlated with the Freedom House measure of democracy (which I have been using up to this point) in the expected manner: independence of the executive tends to be lower in democracies, and avenues of non-elite participation are larger. But there are interesting exceptions. The United States, for example, ranks highest not only on the democracy

index, but also in the degree of institutional (de jure) independence of the executive. Other democracies with relatively autonomous executives (de jure) are France, Canada, and Costa Rica. By contrast, South Africa is coded as having had (during the 1970s) little democracy and little executive autonomy.

A nagging question in the literature on political economy is whether an insulated and autonomous executive is necessary for the implementation of economic reforms.[7] This question is somewhat distinct from the question about democracy proper, since, as the examples just mentioned illustrate, one can conceive of democratic systems that nonetheless have well-insulated executives. Therefore the Polity III indicators are particularly relevant.

The results shown in Figures 6-8 are again somewhat surprising—at least when approached from the technocratic perspective. I find that more significant growth declines are associated with greater institutional and operational independence of the executive and lower levels of political access by non-elites.[8] The estimated coefficients are statistically highly significant in all cases. Therefore, not only do we not find that executive autonomy results in better economic management, the results strongly suggest the converse: political regimes with lower executive autonomy and more participatory institutions handle exogenous shocks better![9] This might be part of the explanation for why democracies experience less economic instability over the long run (as demonstrated in the previous section).

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[7] This literature is briefly surveyed and evaluated in Rodrik (1996).

[8] Moreover, the estimated signs on these variables remain unchanged if democracy is entered separately in the regression.

[9] The finding on political participation echoes the argument in Isham et al. (1997) that more citizen voice results in projects with greater economic returns.

Democracy and wages[10]

Finally, I turn to distributional issues. I will provide evidence on the distribution of enterprise surplus in the manufacturing sectors of a broad range of countries. In particular, I will show that there is a robust and statistically significant association between the extent of democratic rights and wages received by workers, controlling for labor productivity, income levels, and other possible determinants. The association exists both across countries and over time within countries (i.e. in panel regressions with fixed effects as well as in cross-section regressions).

My dependent variable is the average level of dollar wages in manufacturing.[11] As is to be expected, labor productivity (manufacturing value added, MVA, per worker) turns out to be the main determinant of wage differences across countries. But other variables play a role as well, as shown in column (1) of Table 3. I find that controlling for labor productivity, higher wages are associated with higher levels of GDP per capita and with higher levels of consumption prices. They are also associated with greater democracy.[12]

The estimate in column (1) suggests a statistically highly significant (p-value < 0.000) and sizable impact from democratic institutions. Going from the level of democracy in Iraq (0) to that in the U.S. (1) is associated with an increase in wages of 60 percent, holding all else constant. Somewhat more realistically, moving from Mexico's democratic level (0.5) to that of the U.S. is

[10] This section draws heavily on Rodrik (1997b).

[11] The data come from UNIDO, via the World Bank's Labor Market Data Base (see Rodrik 1997b for more details on data sources). I am grateful to Martin Rama for making the data available.

associated with an increase of 30 percent. (Note that the panel estimates reported later would lead us to reduce these impacts by half.)

The partial scatter plot shown in Figure 9 gives a visual sense of the results. We notice that countries with greater democratic freedoms than would have been predicted from their income levels such as India, Israel, Malta, and Cyprus also have correspondingly higher wages relative to productivity. Some countries at the other end of the spectrum—lower-than-expected values for the democracy index and low wages—are Syria, Chile[13], Saudi Arabia, Turkey, and Mexico.

Columns (2) through (7) check for robustness by including a number of additional regressors (regional and country-grouping dummies are included in all the regressions). I first try some variables that were included in Freeman's (1994) paper on national wage differentials: schooling, urbanization, and openness. None of these enters significantly, which is not surprising since unlike Freeman (1994) I control for labor productivity directly. Next I include a dummy for oil exporters, which enters with a negative sign (contrary to my expectations) but is again not significant. Finally, I include two measures of labor rights: the unionization rate and the number ratified among the ILO's six basic workers' rights conventions. Neither is significant by conventional standards, and the sign on unionization is actually negative. We should not take the latter result seriously, however, because of the small sample size in the regression where

[12] The regressions shown in Table 3 also include a range of regional and country-grouping dummies (see note to the Table). The estimated coefficients tend to be statistically significant for East Asia and Latin America (and negative in both cases).

[13] The data refer to the 1985-89 period, during which Chile was run by a military dictatorship. Democratic elections were held in 1989 (see below on the Chilean case).

unionization is included (42 countries).[14] The estimated coefficient on democracy remains virtually unchanged and highly significant in all these regressions.

The final column of Table 3 shows the results of two-stage least squares estimation, with democracy treated as an endogenous variable. Following the work of Barro (1996), I use schooling, a dummy for oil exporters, and five-year lagged democracy as instruments. The estimated coefficient on democracy is still highly significant, and actually larger.

These results are for a cross-section of about 80 countries during the second half of the 1980s. The democracy index is available on a consistent basis for the entire 1970-94 period. The data on labor costs and productivity are more patchy, but it is possible to construct time series for a significant number of countries. Therefore, the natural next step is to pool time-series and cross-section data and use panel techniques to see whether the relationship between democracy and wages holds up in a panel setting as well. I use five-year averages of the data covering a maximum of five sub-periods for each country, namely 1970-74, 1975-79, 1980-84, 1985-89, and 1990-94. This gives us a total of 388 observations. (The panel is not balanced since not all countries have data for all five-year sub-periods.)

I run three types of regressions on the pooled data: OLS with period dummies; random-effects (also with period dummies); and full fixed-effects (with dummies for both periods and countries). Note that the fixed-effects methodology is particularly demanding in this context, as it requires that the effect of democracy on wages be recovered from the relatively few time-series observations for individual countries. Since wages and MVA/worker are both measured in current dollars, I run these regressions also in a slightly different form to eliminate any spurious

[14] Also, the sign on unionization turns positive when democracy is excluded from the regression, but the coefficient remains insignificant.

effects arising from inflation over time: I use as my dependent variable the ratio of wages to MVA/worker (which I call "unit labor costs").

The results, displayed in Table 4, are remarkably consistent where the democracy variable is concerned, regardless of the method of estimation.[15] I obtain a range of estimates for the coefficient on democracy of 0.2-0.4, with the fixed-effects regressions providing the lowest estimates. All the estimates are statistically significant at the 95 percent level or better. Indeed, in light of the limited number of time-series observations and the relatively small variation in democracy over time in most countries, it is striking that the results of the fixed effects regressions are so strong. This constitutes quite persuasive evidence that the enhancement of democratic institutions raises wages for workers.

I end by providing some event-study type evidence from countries that have gone through significant transformations in regime type. Table 5 lists twelve instances of transition (drawn from the experiences of Chile, Turkey, Argentina, Brazil, Hungary, Spain, Greece, and Portugal), selected according to availability of continuous annual data and a clear instance of regime change. In each case, the table shows the pre- and post- level of wages relative to labor productivity, or alternatively the factor share of labor (wL/pQ). In all four cases of transition from democracy to authoritarian regimes, we find a dramatic fall in the factor share of labor. In six out of eight cases of transition <u>to</u> democracy we find an increase in the labor share. On the whole, 10 out of the 12 cases listed here behave in the manner consistent with the econometric results.

[15] We include openness on the right-hand side of these regressions because it enters with a statistically significant coefficient in the pooled OLS version. However, this variable is no longer significant when we estimate the regressions with random or fixed effects (giving us a result more in line with the cross-section results reported in Table 3).

The conclusion I draw is that democratic institutions tend to be friendly to labor: they result in higher wages and a larger factor share for labor. In other words, they enhance the bargaining power of workers relative to employers. And they do this without necessarily reducing economic growth over the longer run (as the earlier evidence indicated).

Concluding remarks

Theoretical speculations on the links between political liberty and economic performance are plentiful. In general, one can make arguments that go both ways. My focus in this paper has been on the empirical evidence. I have shown that democracies perform better on a number of dimensions: they produce less randomness and volatility, they are better at managing shocks, and they yield distributional outcomes that are more desirable.

I close by suggesting three hypotheses as to why democracy may result in better economic performance. First, under democracy, the range of feasible economic policies is restricted to a greater extent by the preferences of the median voter. This is less likely to produce extreme results. Second, institutionalized forms of political participation allow for greater voice without the need for conflict and civil strife. Third, democracies have greater difficulty excluding the losers in political competition from economic rewards. This reduces the incentives for social groups to partake in non-cooperative and disruptive behavior ex ante.[16] Which of these arguments, if any, is responsible for the evidence I have presented here remains unclear.

[16] This last argument is sketched out in a model in Rodrik 1997a.

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Table 1

Variance of economic performance under different political regimes

	coeff. of variation of long-run economic growth rates under:	
	autocracies	*democracies*
unconditional	1.05	0.54
conditional	0.70	0.48
	"low democracy"	*"high democracy"*
unconditional	1.02	0.61
conditional	0.64	0.54

Note: See text for explanation.

Table 2

Democracy and volatility of economic performance

(estimated coefficient on democracy from multiple regression)

	dependent variable			
	standard deviation of growth rate of:			
	real GDP	*consumption*	*investment*	*consumption*
	OLS	*OLS*	*OLS*	*IV*
democracy	-1.31**	-2.33**	-4.36*	-4.97**
	(0.60)	(1.09)	(1.61)	(2.10)
N	101	101	101	88

Note: Additional regressors (not shown): log per-capita GDP, log population, a measure of exposure to external risk, dummies for Latin America, East Asia, sub-Saharan Africa, and OECD. Robust standard errors reported in parentheses. Secondary enrollment ratio used as instrument in IV estimation. Asterisks denote levels of statistical significance: ** 95 percent; * 99 percent.

Table 3

Democracy and wages: Cross-section results (1985-89)

	dependent variable: log labor costs, 1985-89 average							
	OLS	*OLS*	*OLS*	*OLS*	*OLS*	*OLS*	*OLS*	*2SLS*
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*
democracy	0.60*	0.60*	0.61*	0.60*	0.52*	0.59**	0.60*	0.69*
	(0.16)	(0.17)	(0.15)	(0.16)	(0.16)	(0.25)	(0.17)	(0.22)
log MVA/worker	0.80*	0.81*	0.81*	0.80*	0.80*	0.86*	0.80*	0.81*
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.10)	(0.05)	(0.05)
log GDP/cap.	0.20*	0.24**	0.22**	0.19*	0.22*	0.24**	0.21*	0.16***
	(0.07)	(0.11)	(0.09)	(0.07)	(0.06)	(0.11)	(0.07)	(0.09)
log price level	0.51*	0.55*	0.52*	0.51*	0.53*	0.49***	0.49*	0.57*
	(0.18)	(0.19)	(0.18)	(0.18)	(0.19)	(0.26)	(0.18)	(0.20)
log schooling		-0.12						
		(0.10)						
urbanization			-0.16					
			(0.25)					
openness				0.03				
				(0.07)				
oil exporters					-0.16			
					(0.13)			
unionization						-0.09		
						(0.22)		
basic worker rights							0.03	
							(0.02)	
N	80	73	79	80	80	42	79	73
Root MSE	0.28	0.29	0.29	0.29	0.28	0.30	0.28	0.29
R^2	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95

Notes: Regressions include a constant term and dummies for East Asia, Latin America, Sub-Saharan Africa, socialist countries, and OECD members (coefficient estimates not shown). Five-year lagged democracy, schooling and oil dummy used as instruments in the regression shown in column (8) Robust standard errors are reported in parenthesis. Levels of statistical significance are indicated by asterisks: * 99 percent; ** 95 percent; *** 90 percent.

Table 4

Democracy and wages: Panel results (1970-94)

	log labor costs			*log unit labor costs*		
	OLS	*random effects*	*fixed effects*	*OLS*	*random effects*	*fixed effects*
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
democracy	0.30*	0.23*	0.20**	0.41*	0.26*	0.19**
	(0.08)	(0.08)	(0.09)	(0.08)	(0.08)	(0.09)
log MVA/worker	0.82*	0.83*	0.85*			
	(0.03)	(0.03)	(0.04)			
log GDP/cap.	0.21*	0.25*	0.30*	0.10*	0.16*	0.21*
	(0.03)	(0.04)	(0.07)	(0.03)	(0.04)	(0.07)
log price level	0.27*	0.18*	0.11	0.11***	0.08	0.08
	(0.07)	(0.05)	(0.07)	(0.06)	(0.06)	(0.07)
openness	0.09*	0.06	-0.10	0.14*	0.09	-0.07
	(0.03)	(0.05)	(0.10)	(0.04)	(0.06)	(0.10)
period dummies	yes	yes	yes	yes	yes	yes
country dummies	no	no	yes	no	no	yes
N	388	388	388	388	388	388
R^2	0.95	0.95	0.93	0.43	0.42	0.22

Notes: Estimated using five 5-year averages covering 1970-74, 1975-79, 1980-84, 1985-89, and 1990-94. OLS and random effects regressions include a constant term and dummies for East Asia, Latin America, Sub-Saharan Africa, socialist countries, OECD members, and oil exporters (coefficient estimates not shown). Robust standard errors are reported in parenthesis in columns (1) and (4). Levels of statistical significance are indicated by asterisks: * 99 percent; ** 95 percent; *** 90 percent.

Table 5

Country examples

		factor share of labor	
year	*country*	*pre-transition*	*post-transition*
A. Transitions from democracy to authoritarianism			
1973	Chile	0.24	0.13
1980	Turkey	0.38	0.25
1976	Argentina	0.31	0.19
1964	Brazil	0.26	0.19
B. Transitions from authoritarianism to democracy			
1974	Greece	0.33	0.40
1974	Portugal	0.40	0.58
1975	Spain	0.51	0.58
1989	Chile	0.15	0.17
1989	Hungary	0.35	0.42
1983	Turkey	0.27	0.20
1983	Argentina	0.19	0.20
1985	Brazil	0.22	0.20

Note: Pre- and post-values are calculated using up to three observations prior to and following the year of transition indicated.

Basic data on growth rates and political variables

		growth rates				*political regime variables*			
Country	*elf60*	*brkyear*	*before*	*after*	*difference*	*democ70s*	*xconst_x*	*mono_x*	*parcom_x*
Algeria	0.43	1984	3.296	-1.449	-4.745	0.166667	1	0.925	0
Angola	0.78	1975	0.416	0.886	0.47	0.141667			
Benin	0.62	1980	-0.392	-1.773	-1.381	0.086111	0.966667	0.9	0.05
Botswana	0.51	1973	5.588	4.145	-1.443	0.722222	0	0.5	1
Burkina Faso	0.68	1975	-0.621	1.132	1.753	0.444444	0.740741	0.611111	0.277778
Burundi	0.04	1966	-8.646	1.43	10.076	0.041667	1	0.5	0
Cameroon	0.89	1985	3.277	-6.176	-9.452	0.275	0.916667	0.875	0.09375
Cape verde		1980	2.291	1.489	-0.802	0.244445			
Central Africa	0.69	1980	0.47	-1.74	-2.21	0.008333	1	1	0
Chad	0.83	1982	-2.268	3.125	5.393	0.091667	1	1	0
Comoros		1976	1.477	-0.612	-2.088	0.619444			
Congo	0.66	1982	3.42	-2.004	-5.425	0.15	0.7	1	0
Egypt	0.04	1984	3.363	-0.362	-3.725	0.322222	0.666667	1	0.125
Ethiopia	0.69	1966	2.352	0.43	-1.922	0.141667	0.777778	0.666667	0
Gabon	0.69	1978	7.049	-2.337	-9.386	0.166667	1	1	0
Gambia	0.73	1981	2.994	0.172	-2.822	0.833333	0	0.75	1
Ghana	0.71	1982	0.096	2.258	2.162	0.225	0.777778	0.583333	0.138889
Guinea	0.75	1974	-0.13	0.088	0.218	0	1	1	0
Guinea-Bissau		1977	2.75	1.218	-1.532	0.152778			
Cote d'Ivoire	0.86	1980	3.11	-4.112	-7.222	0.208333	1	1	0
Kenya	0.83	1972	1.972	0.42	-1.551	0.383333	0.666667	1	0.05
Lesotho	0.22	1976	5.344	0.142	-5.202	0.380556	0.866667	1	0.2
Liberia	0.83					0.325	1	0.85	0
Madagascar	0.06	1970	-0.595	-2.957	-2.361	0.363889	0.666667	0.85	0.25
Malawi	0.62	1981	1.801	0.498	-1.303	0.091667	1	1	0
Mali	0.78	1970	-2.881	1.051	3.931	0.05	1	0.8	0
Mauritania	0.33	1976	1.264	-1.481	-2.746	0.194445			
Mauritius	0.58	1974	-1.212	2.84	4.052	0.758333			
Morocco	0.53	1976	3.012	1.425	-1.587	0.422222	0.933333	1	0.35
Mozambique	0.65	1975	1.676	-2.886	-4.562	0.086111			
Niger	0.73	1972	3.381	-1.125	-4.506	0.097222	0.777778	0.611111	0.111111
Nigeria	0.87	1977	6.236	-3.752	-9.988	0.391667	0.9	0.85	0
Rwanda	0.14	1966	-4.531	1.347	5.878	0.161111	1	1	0.1
Senegal	0.72	1969	0.399	0.171	-0.229	0.344445	0.666667	1	0.175
Seychelles		1977	3.31	3.317	0.008	0.670833			
Sierra Leone	0.77	1970	3.439	-1.873	-5.312	0.294445	0.666667	1	0.175
Somalia	0.08	1977	-2.856	-1.466	1.391	0.05	1	1	0
South africa	0.88	1975	3.556	-0.554	-4.11	0.366667	0	0.5	0.25
Sudan	0.73					0.208333	0.666667	1	0
Swaziland		1982	3.759	0.644	-3.114	0.380556	0.966667	1	0.1
Tanzania	0.93	1980	2.726	2.986	0.26	0.166667	0.666667	1	0
Togo	0.71	1977	3.878	-1.225	-5.103	0.097222	1	0.55	0
Tunisia	0.16	1972	3.125	2.361	-0.764	0.25	0.983333	1	0
Uganda	0.9	1981	0.305	-5.101	-5.406	0.016667	1	1	0
Zaire	0.9	1976	1.803	-1.576	-3.379	0.091667	1	1	0
Zambia	0.82	1977	1.517	-3.062	-4.579	0.361111	0.983333	1	0.05
Zimbabwe	0.54	1971	1.306	-0.275	-1.581	0.275	0.037037	0.5	0.277778
Bahamas, The						0.902778	0.933333	1	0.05
Barbados	0.22	1970	5.313	2.249	-3.064	1			

Canada	0.75	1977	3.713	1.773	-1.94	1	0	1	1
Costa Rica	0.07	1981	3.006	1.479	-1.527	1	0	1	1
Dominica						0.766667	0.566667	0.65	0.5
Dominican Re	0.04	1973	2.946	0.495	-2.451	0.697222	0.666667	0.5	0
El Salvador	0.17	1980	2.045	0.364	-1.681	0.683333	0.541667	1	0.46875
Grenada						0.672222			
Guatemala	0.64	1982	2.226	0.16	-2.066	0.594445	0.666667	0.825	0.425
Haiti	0.01	1979	0.161	-2.118	-2.279	0.144445	1	1	0.1
Honduras	0.16	1977	1.871	-0.75	-2.622	0.402778	0.666667	0.525	0.5
Jamaica	0.05	1976	3.76	-0.359	-4.119	0.858333	0	0.5	1
Mexico	0.3	1983	3.537	1.588	-1.949	0.552778	0.666667	1	0.325
Nicaragua	0.18	1979	1.587	-3.891	-5.478	0.411111	1	1	0.25
Panama	0.28	1982	3.44	-1.824	-5.264	0.15	0.966667	0.95	0.075
St.Lucia						0.75			
St.Vincent & Grens.						0.833333			
Trinidad & Tol	0.56	1979	2.879	-3.822	-6.701	0.819445	0	0.5	0.5
United States	0.5	1968	3.432	1.49	-1.942	1	0	1	1
Argentina	0.31	1981	1.799	-1.799	-3.597	0.425	0.8	0.65	0.15
Bolivia	0.68	1978	3.318	-1.579	-4.896	0.369444	0.983333	0.95	0.025
Brazil	0.07	1973	4.068	0.663	-3.404	0.455556	1	0.5	0.175
Chile	0.14	1975	1.229	2.117	0.888	0.308333	0.866667	0.7	0.1
Colombia	0.06	1982	2.881	1.75	-1.131	0.791667	0.166667	0.75	0.75
Ecuador	0.53	1977	4.22	-1.076	-5.296	0.311111	0.8	1	0.375
Guyana	0.58	1975	2.297	-5.383	-7.679	0.633333	0.283333	0.775	0.475
Paraguay	0.14	1980	3.149	-1.149	-4.298	0.316667	1	1	0.25
Peru	0.59	1976	2.497	-2.098	-4.595	0.252778	0.895833	0.5625	0.0625
Suriname		1978	2.374	-3.814	-6.188	0.833333			
Uruguay	0.2	1983	1.063	2.907	1.844	0.308333	0.740741	0.555556	0.111111
Venezuela	0.11	1980	0.871	-0.402	-1.273	0.866667	0.166667	1	1
Afghanistan						0.122222	0.866667	0.9	0.05
Bahrain						0.375			
Bangladesh		1971	1.719	2.725	1.007	0.477778			
Myanmar (Bu	0.47					0.141667	0.883333	1	0
China		1984	3.356	2.231	-1.125	0.058333	0.766667	0.8	0
Hong Kong	0.02	1967	8.184	5.988	-2.196				
India	0.89	1966	-1.323	2.407	3.73	0.741667	0.033333	0.5	0.6
Indonesia	0.76	1967	-1.002	5.135	6.137	0.333333	0.833333	1	0.25
Iran, I.R. of		1978	4.938	-1.147	-6.085	0.233333	0.933333	0.55	0.05
Iraq		1981	3.205	-6.864	-10.069	0.016667	1	0.8	0
Israel	0.2	1971	5.074	1.601	-3.473	0.766667	0	0.5	0.75
Japan	0.01	1974	7.895	3.474	-4.422	0.916667	0	0.5	1
Jordan	0.05	1981	4.983	-2.898	-7.881	0.166667	0.966667	1	0
Korea	0	1980	7.17	8.291	1.121	0.291667	0.95	1	0.225
Kuwait						0.469445	0.833333	1	0
Malaysia	0.72	1986	4.806	8.19	3.384	0.647222	0	0.5	0.75
Nepal	0.7	1977	1.187	-0.475	-1.662	0.266667	0.833333	1	0
Oman						0.116667	1	1	0
Pakistan	0.64	1972	3.915	2.648	-1.267	0.4	0.8	0.7	0.3
Philippines	0.74	1984	2.273	1.744	-0.529	0.333333	0.966667	1	0.05
Saudi Arabia		1979	6.849	-9.051	-15.9	0.166667	1	1	0
Singapore	0.42	1971	6.464	5.261	-1.203	0.333333	0.666667	1	0.25
Sri Lanka	0.47	1978	0.846	2.524	1.677	0.75	0.111111	0.666667	0.5

Syria	0.22	1975	4.872	-0.552	-5.424	0.113889	1	1	0
Taiwan	0.42	1982	6.427	7.506	1.079	0.3	0.733333	0.75	0
Thailand	0.66	1985	4.046	7.864	3.818	0.388889	0.714286	0.642857	0.285714
United Arab Emirates						0.269445	1	0	0
Yemen, N.Ara	0.04					0.355556	0.666667	0.5	0.25
Austria	0.13	1973	3.946	2.029	-1.917	1	0	0.5	1
Belgium	0.55	1973	4.043	1.764	-2.279	1	0	0.5	1
Cyprus	0.35	1974	5.79	5.209	-0.581	0.575	0.05	1	0.85
Denmark	0.05	1974	3.21	1.905	-1.305	1	0	0.5	1
Finland	0.16	1970	3.655	2.281	-1.374	0.833333	0	0.5	1
France	0.26	1973	4.409	1.646	-2.764	0.9375	0.333333	0.75	1
Germany, We	0.03	1970	3.366	1.965	-1.401	0.979167	0	0.5	1
Greece	0.1	1974	6.654	1.459	-5.195	0.722222	0.555556	0.666667	0.666667
Hungary						0.191667	0.666667	0.75	0
Iceland	0.05	1980	4.133	1.273	-2.861	1	0	0.5	1
Ireland	0.04	1983	3.482	4.325	0.844	0.95	0	0.5	1
Italy	0.04	1975	4.212	2.271	-1.941	0.9	0	0.5	1
Luxembourg	0.15	1969	0.551	2.362	1.812	0.941667	0	0.5	1
Malta	0.08	1976	6.389	4.064	-2.325	0.927778	0	0.5	0.5
Netherlands	0.1	1973	4.111	1.29	-2.821	1	0	0.5	1
Norway	0.04	1987	3.598	1.4	-2.199	1	0	0.5	1
Poland						0.191667	0.666667	0.5	0.025
Portugal	0.01	1971	5.845	2.402	-3.444	0.591667	0.479167	1	0.625
Spain	0.44	1977	5.05	2.421	-2.629	0.477778	0.571429	0.785714	0.321429
Sweden	0.08	1970	3.359	1.438	-1.921	0.991667	0	0.5	1
Switzerland	0.5	1975	2.517	1.539	-0.978	1	0	0	1
Turkey	0.25	1979	3.7	2.654	-1.045	0.625	0.233333	0.5	0.575
United Kingdo	0.32	1987	1.986	-0.706	-2.692	1	0	0.5	1
Yugoslavia						0.191667	0.65	0.925	0
Australia	0.32	1974	3.184	1.547	-1.636	1	0	0.5	1
Fiji		1973	2.606	0.294	-2.312	0.833333	0	0.5	0.75
New Zealand	0.37	1977	1.82	0.87	-0.95	1	0	0.5	1
Papua New G	0.42	1969	4.905	-1.201	-6.106	0.7625			
Solomon Islands						0.741667			
Tonga						0.527778			
Vanuatu						0.616667			
Western Samoa						0.666667			

Sources: Growth data come from Pritchett 1997; ELF60 from Mauro 1995; political variables from Freedom House (*democ70s*) and Jaggers and Gurr 1995 (all others).

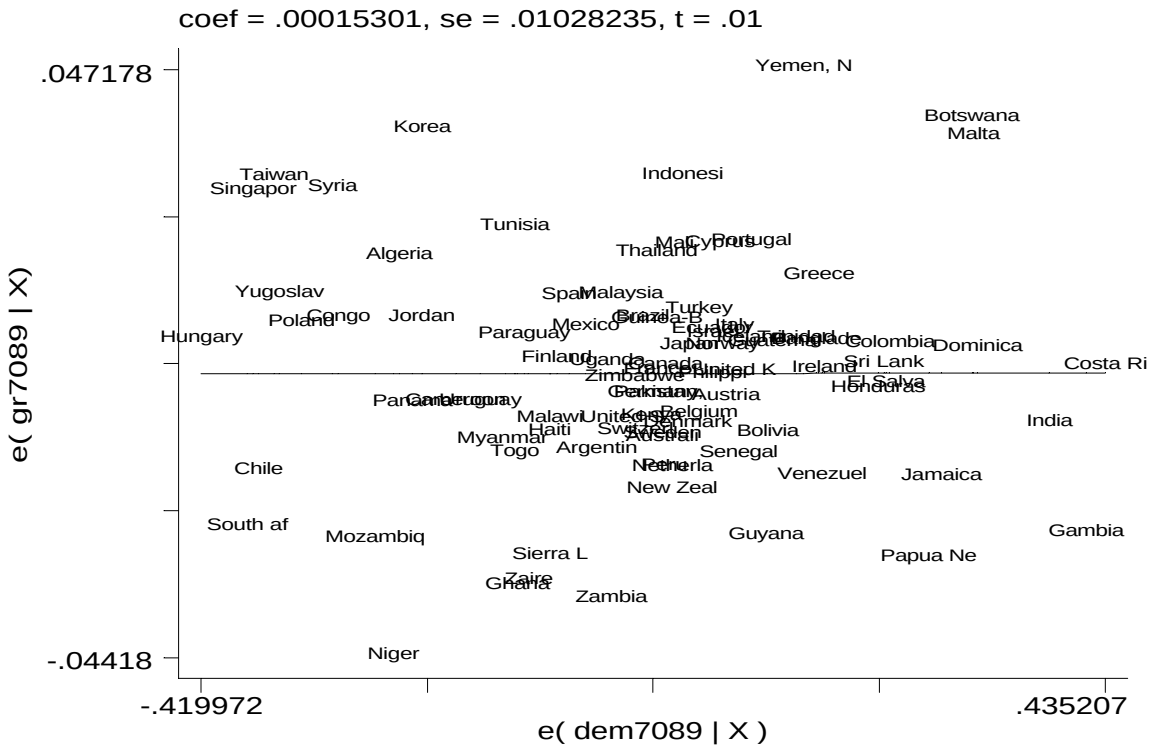

Figure 1: Partial correlation between democracy and economic growth, 1970-89 (controlling for initial income, secondary enrollment, and quality of governmental institutions)

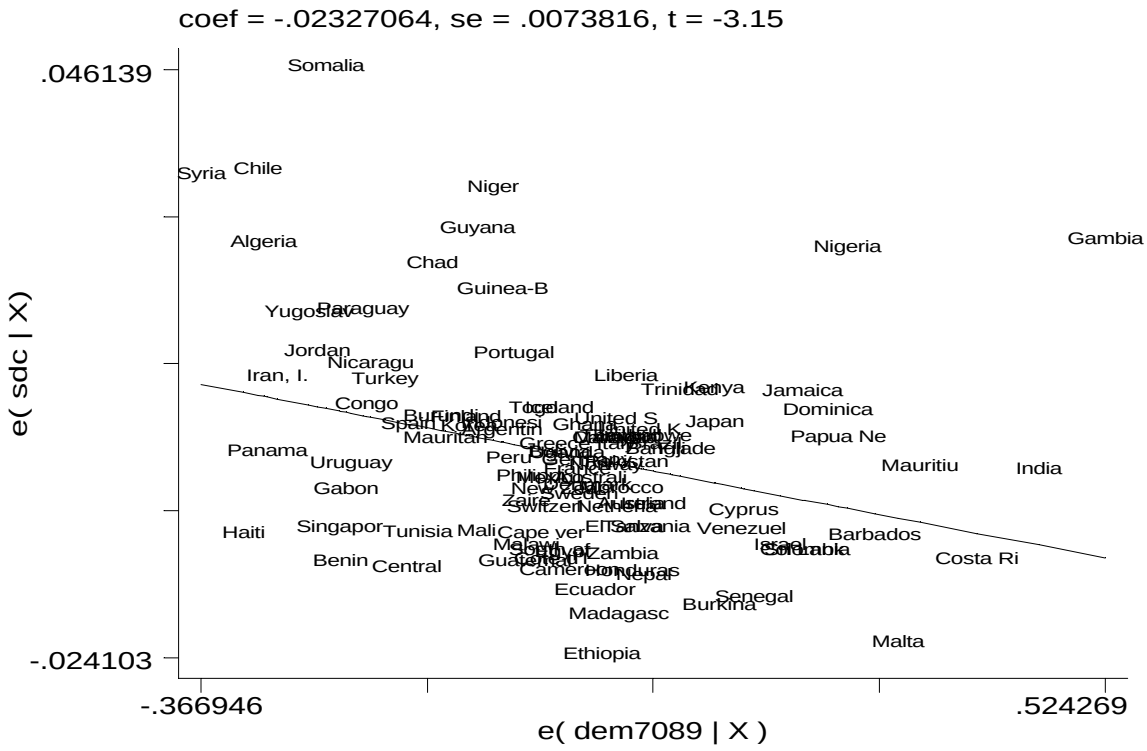

Figure 2: Partial correlation between democracy and consumption volatility

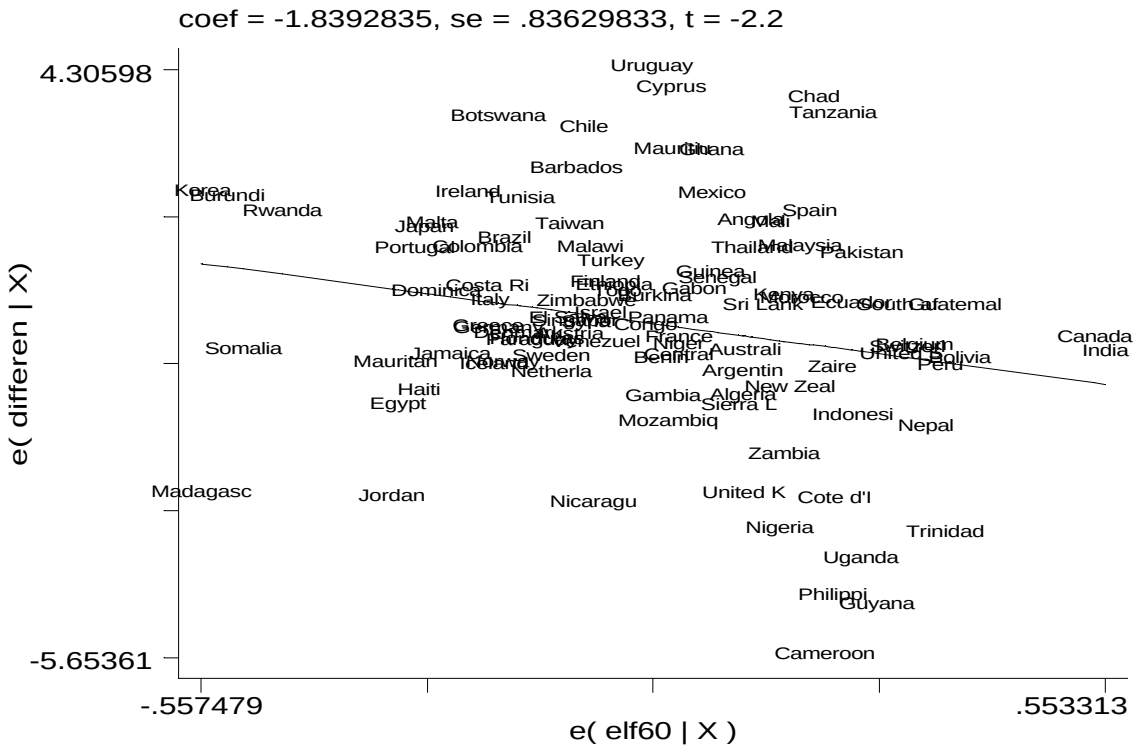

Figure 3: Ethnic cleavages and growth differentials (pre- and post- break year in trend growth)

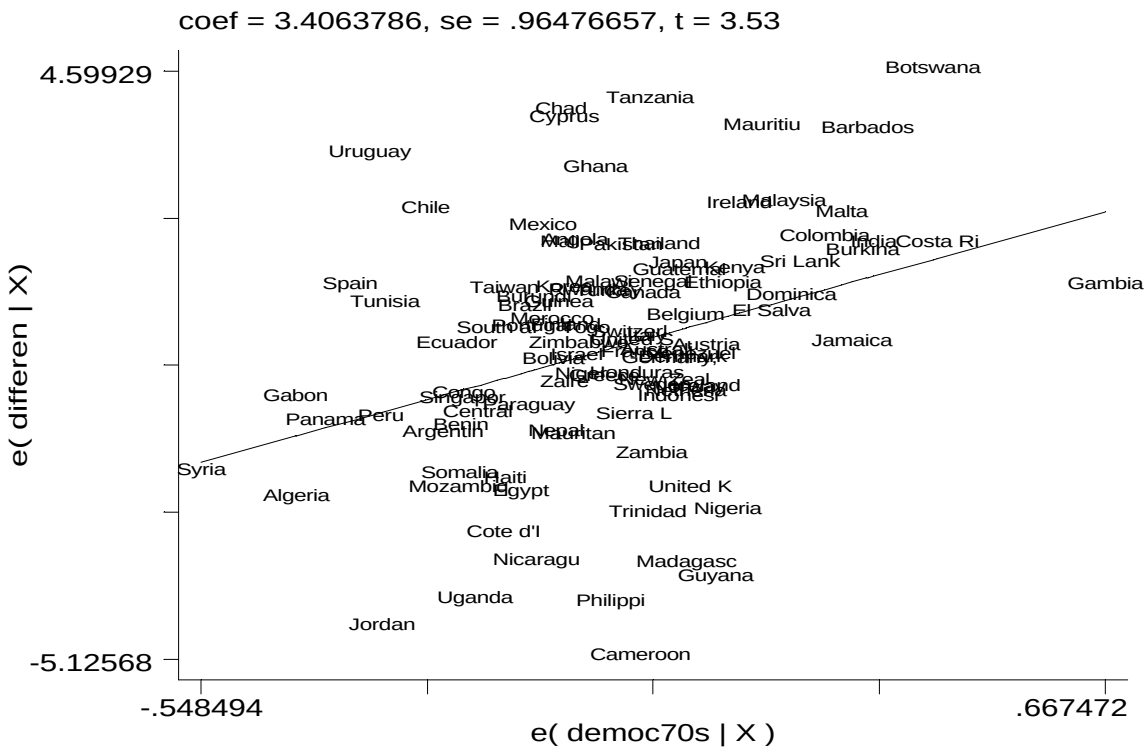

Figure 4: Democracy and growth differentials (pre- and post- break year in trend growth)

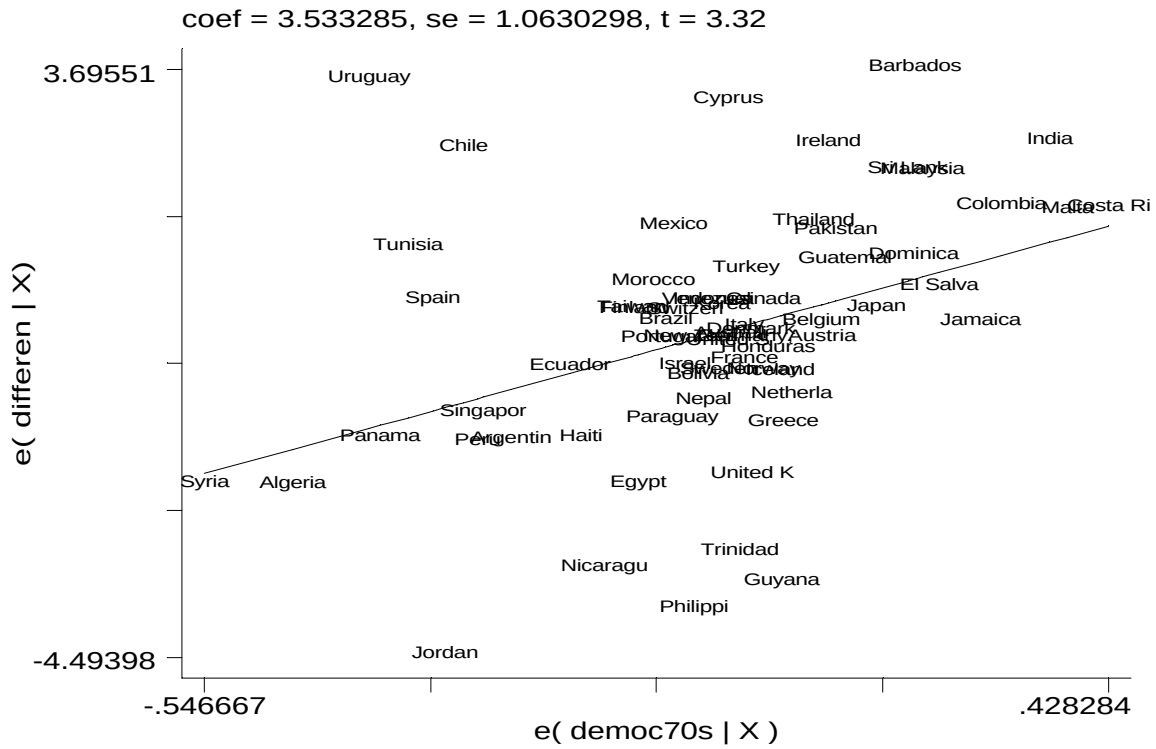

Figure 5: Democracy and growth differentials (pre- and post- break year in trend growth), excluding sub-Saharan African countries

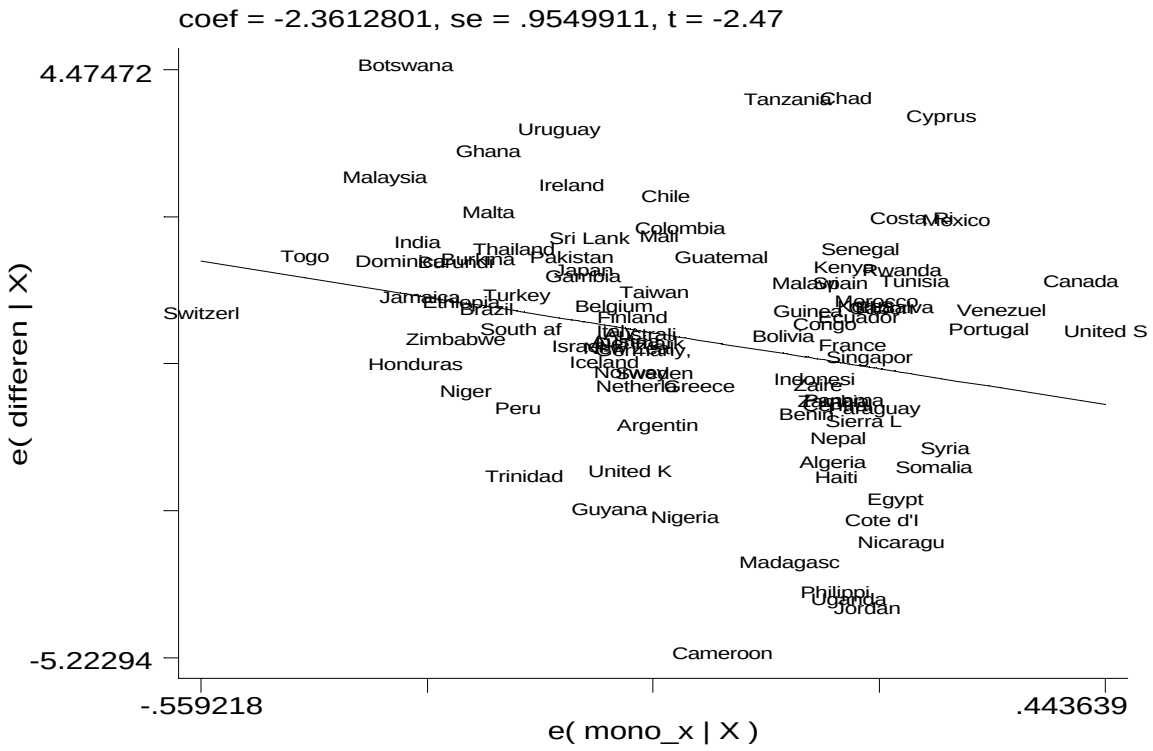

Figure 6: Institutional (de jure) independence of the executive and growth differentials (pre- and post- break year in trend growth)

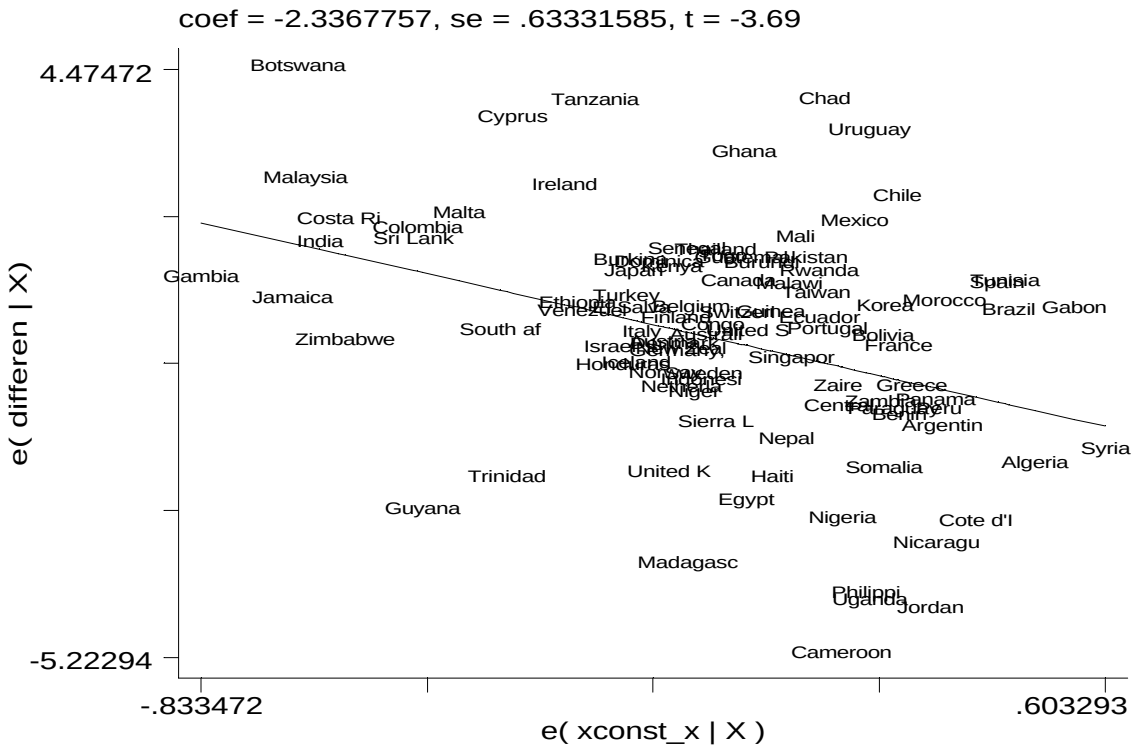

Figure 7: Operational (de facto) independence of the executive and growth differentials (pre- and post- break year in trend growth)

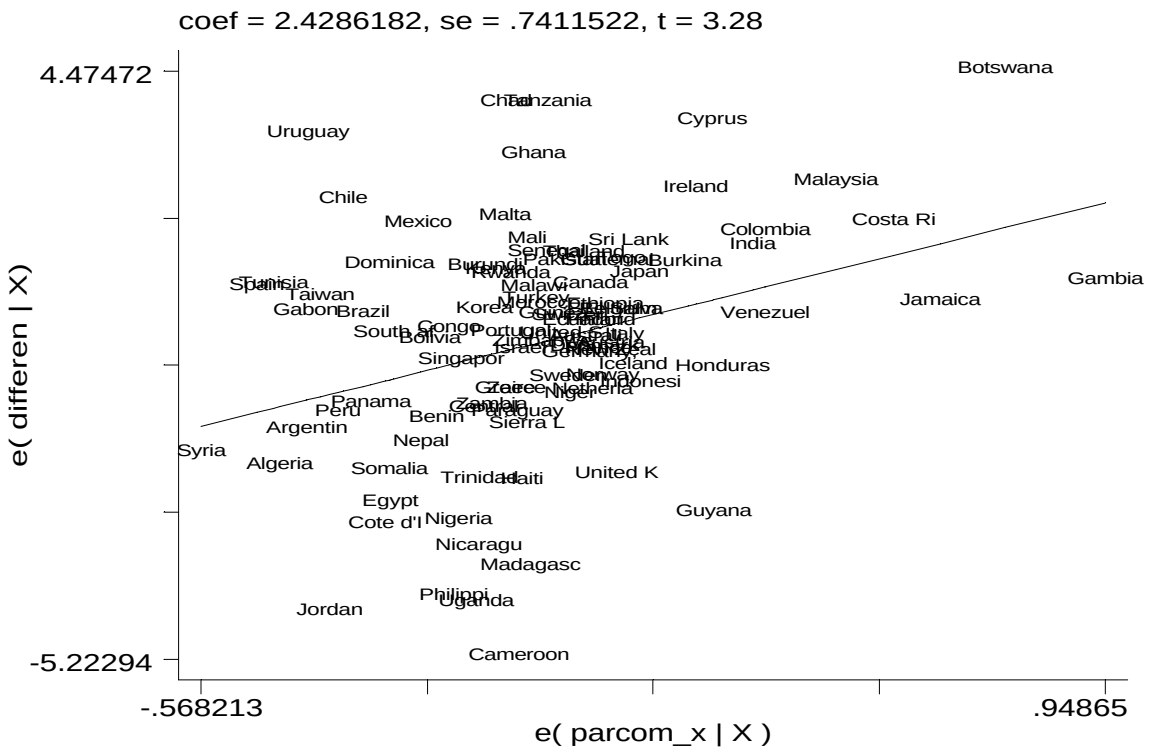

Figure 8: Ability of non-elites to access political institutions and growth differentials (pre- and post- break year in trend growth)

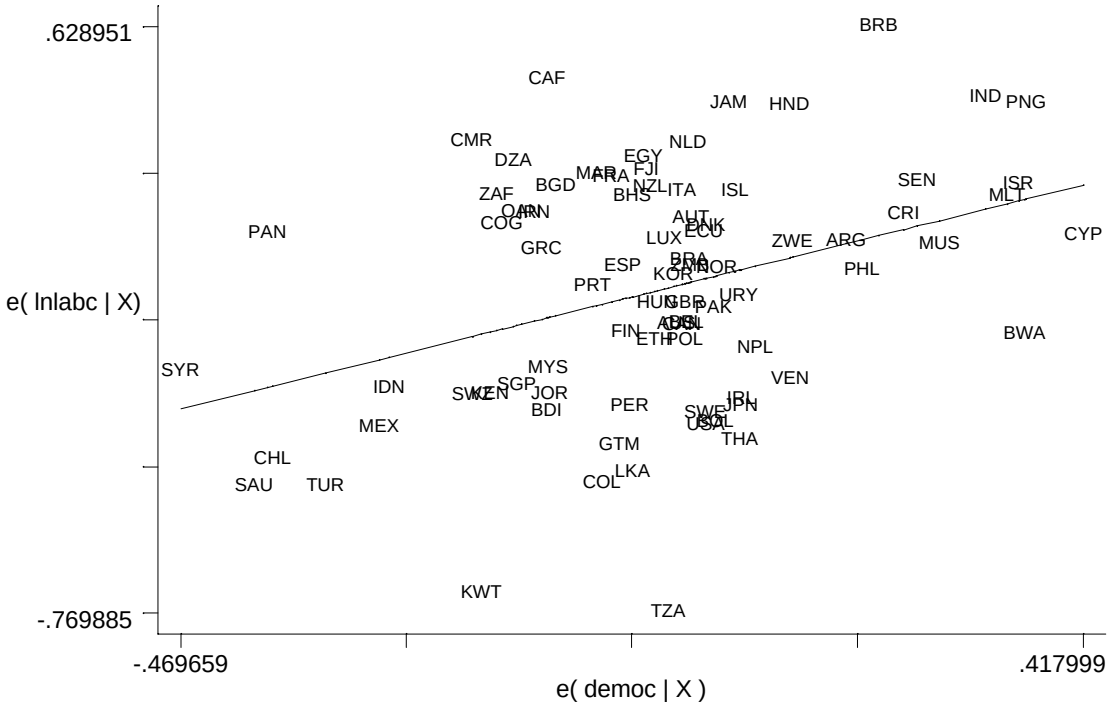

Figure 9: Partial scatter plot of democracy and wages