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Do Good Institutions Lower the Benefit of Democratization?

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Abstract: Recent studies have reported positive associations between democratization and economic growth. They have also explored how these associations could differ across regions or income levels. However, might the effects of democratization upon growth also depend upon other factors such as institutions promoting law and order (or the lack thereof)? Using a panel specification, we employ a democratization-law and order interactive term to examine if the effects of democratization upon economic growth depend upon these other institutions. We find that the coefficient on the interaction term is negative. The positive effects of democratization diminish in countries where other institutions are strong. In fact, we find that democratization could even lower growth where the rule of law already prevails.

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1. Introduction

Many studies have considered associations between democracy (or democratization) and economic growth. Early studies often employed a cross-sectional data set but failed to reach consensus. Some studies found that democracies grow faster, others nondemocracies, and still others find no statistical difference between the two.[1] However, more recent work such as Papaioannou and Siourounis (2008a), Rodrik and Wacziarg (2005), Giavazzi and Tabellini (2005), and Persson (2005) employ panel techniques. They take a control-treatment approach where democratization is the treatment. They then compare outcomes between the two groups and generally find that democratization is associated with faster economic growth. These studies also sometimes consider why associations between democratization and economic growth could differ across countries. Giavazzi and Tabellini (2005) explore how the timing of democratization relative to economic reform impacts growth whereas Rodrik and Wacziarg (2005) consider if associations differ across regions.[2]

Of course, many other factors might also influence associations between democratization and economic growth. One such factor could be other institutions within a country that determine whether the rule of law is applied and followed. A long literature considers how such institutions benefit growth. See North (1981, 1990), Acemoglu, Johnson, and Robinson (2001), and Hall and Jones (1999) for surveys. Consider two countries, one with a high degree of "law and order" such as Chile under Pinochet and the other with weak institutions such as South Africa. Both democratize but

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[1] Przeworski and Limongi (1993) and Papaioannou and Siourounis (2008a) provide more complete surveys of this empirical literature.

[2] Collier (2000) and Bluedorn (2001) find evidence that democracy is more positively associated with economic growth in ethnically diverse countries.

democratization does not affect these economic institutions. That is, political reform occurs but reform along other dimensions is absent. Then, does democratization affect economic growth in these two countries similarly? If political reform and law and order are separable, then the answer is "yes". The effect that democratization has upon economic growth does not depend upon this other type of institution in the country. However, if the two are substitutes, then we would expect the effect upon South Africa to be greater (provided that democratization raises economic growth) since the stronger institutions in Chile diminish the growth effects from democratization. But Chile would grow faster if the two are complements with their effects on growth reinforcing one another.

Figure 1 considers these two countries. To better compare the two, assume that both democratization events occurred in year zero. Both countries GDP per capita has been normalized to equal one at time zero. To the left of zero shows what happened to GDP per capita in the sixteen years preceding democratization. We choose sixteen years so as not to capture the downfall of the democratic Allende regime in Chile in 1973. To the right of zero shows what happened after the democratization event. Since democratization occurred in South Africa in 1994 but in Chile in 1990, the South African line is shifted four years to the left and this is why the Global Financial Crisis appears to have happened four years earlier in South Africa. But the relevant comparison is not between South Africa and Chile. Chile grew faster both before and after democratization. Instead, compare income before the democratization event to that afterwards. Income had been falling in South Africa but rose after democratization whereas growth in Chile changed little after democratization compared to the seven years

preceding it. Starting in 1984 (the first year of our sample in our formal empirical work) growth averaged 4.77% in Chile before democratization and 4.89% afterwards. In South Africa, on the other hand, average growth increased from -1.57% to 2.10%. In this simple comparison, democracy and law and order appear to be substitutes. The country with the higher law and order score (Chile which averaged 4 before democratization and 4.8 afterwards) had a smaller growth effect following democratization. South Africa's law and order score went from 2 to 2.6.[3]

We are asking a different question than if political reform impacts economic institutions which then raises economic growth. Rivera-Batiz (2002) creates a model where corruption is lower in a democracy. Friedman (1962) argues that democracy and economic freedoms promote one another. However, the above example with Chile and South Africa does not presume that democratization causes or does not cause changes in economic institutions. Instead, this paper examines if the association between democracy and growth depends upon the degree of law and order. Such an analysis can better help predict why the effects of democratization could differ across countries. In this paper, we examine if the effects of democratization upon economic growth depend upon institutions associated with the rule of law.

The remainder of the paper is organized as follows. Section 2 discusses democratization, economic institutions, and their interactions in greater detail. Section 3 presents the econometric model. Section 4 discusses the potential for democratization and economic institutions to be endogenous and to what extent this could be a problem for the

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[3] Given that rule of law data from ICRG is measured on a zero-to-six scale, we consider changes of 0.8 and 0.6 to be small.

methodology of the previous section. Section 5 presents results and section 6 provides concluding discussion.

Section 2: Economic and Political Institutions

North (1990) defines institutions as the "rules of the game". They are "humanly devised constraints that shape human interaction" (p. 3). Such constraints can be formal laws that prohibit one from seizing others' property. An independent, impartial judiciary is generally viewed as a beneficial arbiter of property disputes or a salutary mechanism through which violators of private property are punished. But constraints can also be less formal. The fear of ostracism from a group can limit predatory behavior even in the absence of legal restrictions. Traditions mold behavior even if they are not codified into formal law. An even less formal constraint is one's own code of conduct that would discourage theft even if the probability of getting caught is zero. Such constraints, whether formal or informal, provide "property rights" within society as they protect individual property. Where property rights are well established, people have more incentive to invest and engage in productive activities since they reap the returns from these endeavors. Moreover, they have less incentive to engage in rent seeking because of the difficulty in expropriating others' wealth and so they devote fewer resources to rent seeking. Those institutions that influence the incentives for productive versus rent seeking activities we denote as "economic institutions".

This term is certainly broad in that economic institutions could derive from many sources as well as take on many different forms. In this paper, we focus upon the extent of law and order as influencing economic institutions. This is not to suggest, however,

that law and order provides the only foundation for economic institutions. The first term, "law", considers whether parties in disputes (either civil or criminal) can appeal to formal, nonpartisan, legal settings for their resolution. Such renderings are not made capriciously but according to explicit legal codes and precedent. The second term, "order", considers whether people's behavior is generally congruent with the law or whether people flaunt it. Countries with a high degree of law and order, then, have stronger property rights since their property cannot be confiscated arbitrarily by the government and the government is strong enough to protect one's property from confiscation by others since it can enforce lawful, objective verdicts and decrees.

But we also consider political institutions and define these to be constraints on government actors, including government officials.[4] Such political constraints partially overlap with other types of constraints, especially in cases where laws or constitutional provisions prohibit the government from seizing property without just compensation. But they also include other constraints on government that have little to do with property, at least directly. Democratic systems often contain checks and balances that assign specific and distinct powers to different branches of government. Constraints on an executive that limit his powers are another example. Political constraints also include limitations spelled out in a Bill of Rights that place limits on a government's powers to limit speech, the press, assemblage, the ability of the citizenry to petition government, etc. Democratic

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[4] Although we use similar terms, the meanings of our terms differ from those in Acemoglu and Johnson (2005) [AJ]. They consider economic institutions as ones pertaining specifically to enforcement of contracts whereas political institutions (which they call "property rights institutions") pertain to constraints on the government – constitutional or self-imposed – from appropriating private property. With AJ, property rights institutions can arise in both democratic and nondemocratic regimes. We, on the other hand, focus upon whether a regime is democratic or not in delineating political institutions. Moreover, we take economic institutions as more than constraints enabling the enforcement of contracts but rather as a more general protection of private property through law and order although contract enforcement is certainly one component. Seizures of property by criminal organizations, bandits, or mobs provide other examples of insecure property rights and examples where the government is not the predator.

governments must also be transparent to a large extent and this transparency can also constrain government malfeasance. A hesitancy to go against popular opinion is another example of a less formal constraint. On the other hand, political constraints need not impose "law and order" because the government is too weak to enforce its decrees.

To what extent do economic institutions such as law and order and political institutions coincide? Consider a strong democracy, presumably the type of political system where political constraints are most pronounced. Are these the same countries where economic constraints and property rights are best enforced? Not always. Yew of Singapore and Pinochet of Chile provide examples of authoritarians that pushed policies that largely protected private property even if their political systems were not democratic. On the other hand, democratic governments might be too weak to protect private property from domestic predators (gangs or mafia) or external threats. Hoff and Stiglitz (2004) create a model where agents (perhaps even in a democracy) choose not to establish a rule of law to protect property. More generally, political and economic constraints do not always pertain to the same set of people. Political constraints focus on those in government. Law and order applies more broadly, forbidding certain actions across all individuals. Consequently, one need not imply the other.

But if law and order can occur under both democratic and nondemocratic regimes, then how might the two interact to affect economic outcomes like economic growth? Suppose that the two reinforce one another. Then, the benefits of democratization should be highest where economic institutions are already strong. Perhaps the benefits of an independent judiciary can only be maximized under strong democratic forms of government; or, perhaps the benefits of strong property rights are greatest only in

democracies where confidence is greatest that these strong property rights will be sustained. A possible example showing the importance of both is the American South following the Civil War and the failure of Reconstruction. Blacks could nominally vote but few actually did due to intimidation. They enjoyed few legal protections and their property rights were insecure. White violence against them was tolerated even when not generally encouraged. Acemoglu and Johnson (2006) also use Reconstruction as an example of how a change in political institutions such as following the defeat of the Confederacy and the abolition of slavery had little effect on economic institutions because the property rights of blacks remained insecure. They further imply that the failure to improve economic institutions retarded the South's economic development.[5]

Now consider the opposite case where the benefits of strong political institutions and economic institutions overlap. This could occur if the political constraints of a democracy also provide some protection of property because they explicitly constrain government actions against property or promote transparency that also constrains the predatory behavior of government officials. In such a case, the benefits of democratization upon economic growth would diminish where law and order is already strong compared to where it is weak. Instead, democratization could have the biggest effect on growth where property rights are nonexistent because the increased political constraints resulting from democratization provide at least some protection of property (if only from those in government) where none had existed previously. Consider Figure 2

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[5] Unfortunately, such within country cases cannot be examined with country level data. Nevertheless, the above case provides an example where nominal changes in political institutions have little effect on economic outcomes due to the persistence of other institutions.

showing GDP per capita in France and Germany before World War One.[6] France became

democratic under the Third Republic following its defeat by Germany in 1871 whereas

Germany remained nondemocratic. But as seen in Figure 2, no indication arises that

growth in France was greater on average than that in Germany. A possible explanation is

that property rights in the two were similar and so the democratic reforms in France

changed economic growth little relative to that in Germany.[7] Although the figure is

suggestive, the next section will consider a more formal analysis using more recent data

to determine if associations between democracy and growth are stronger, weaker, or the

same in high rule of law versus low rule of law countries.

Section 3: Methodology

This section presents the empirical model in part A and then the data in part B.

Part A: Econometric Models

In this section, we describe a fixed effects methodology to estimate the following

model, similar to the models from Papaioannou and Siourounis (2008a) [PS] and

Giavazzi and Tabellini (2005) [GT]:

$$G_{i,t} = \alpha_i + \beta_t + \rho(\text{LAW})_{it} + \zeta(\text{DEM})_{it} + \theta(\text{LAW}\times\text{DEM})_{it} + \lambda(X)_{it} + \varepsilon_{i,t} \ldots\ldots\ldots (1)$$

where i subscripts denote the country and t subscripts denote the year. G is the growth

rate of GDP per capita. The parameters α and β denote country and period fixed effects.

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[6] Data can be found at: http://www.ggdc.net/MADDISON/oriindex.htm.

[7] Acemoglu et al. (2012) examine long-run institutional effects from Napoleon's occupation of Germany. Although not in all German states, the authors provide examples where French legal codes and other institutions were rapidly applied in the various German principalities. These institutions persisted over time and so, presumably, narrowed differences between the two countries.

LAW denotes "law and order" and captures the economic institutions of the country. $DEM_{i,t}$ denotes democracy and is discussed in part B. The key parameter to be estimated is θ. A negative value implies that the effects of democratization on growth are less positive (more negative) in countries with strong economic institutions. Matrix X comprises other controls that will sometimes be included in (1) such as lagged growth rates or the degree of openness of the economy. These will be discussed below as needed. The residual has zero mean but not necessarily identical variance across countries. We also allow for arbitrary correlation over time and so calculate standard errors as in Arellano (1987).[8]

As in PS and GT, many other controls from the growth literature are absent. To the extent that these controls are invariant over time, they are captured by the fixed effects. Also similar to GT and PS, we initially exclude initial income or lagged growth in order to keep absent a lagged dependent variable on the right hand side. Nevertheless, we will later consider such robustness checks.

Another cause of concern is that countries might only choose (or self-select into) democracy when the potential for benefits upon growth is high. Suppose only those countries where democracy would increase economic growth actually became democratic whereas countries that remained nondemocratic did so because no positive effects on growth from political change would arise. Then, examining what happened in one group to predict what would have happened in the other if those countries had followed a different path is inappropriate. We proceed with the analysis assuming that such a selection problem does not arise. PS, Rodrik and Wacziarg (2005), and GT make similar

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[8] Bertrand et al. (2004) find that use of such standard errors adequately accounts for serial correlation in the residuals.

assumptions. Of course, implications from this study should be tempered due to this possibility.

Finally, the model in (1) takes both LAW and DEM to be exogenous. Obviously, concerns arise as to whether these are appropriate assumptions. Section 4 addresses these endogeneity concerns at greater length.

Part B: Description of the Data

We consider two time horizons. In the majority of specifications, we consider five-year horizons for five periods: 1986-90, 1991-95, 1996-2000, 2001-2005, and 2006-2010 and average the data across each window. Such windows help to average out business cycle effects. However, as a robustness check we will also consider annual data from 1984 to 2010 as our second time horizon. We begin in 1984 since this is the first year data is available for LAW across a wide range of countries. The advantage of annual data is that it allows one to better pinpoint political and institutional changes.

Data for chained, real GDP per capita (adjusted for PPP) comes from version 7.1 of the Penn World Tables. LAW comes from the "law and order" variable of the Inter-Country Risk Guide (ICRG) put out by Political Risk Services.[9] The advantage of ICRG data over that from the World Governance Indicators is that the latter only begins in 1996 and not annually until 2000. LAW is measured on a zero to six integer scale where higher values denote greater adherence to the rule of law although to ease presentation of the results we have converted the original ICRG zero-to-six interval to a zero-to-one interval. LAW not only captures the strength and impartiality of the legal system but also whether

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[9] ICRG data was first used in the economics literature by Knack and Keefer (1995) and Hall and Jones (1999).

or not the law is popularly observed. We consider adherence to the rule of law as our institutional measure since we take it to be a good measure of the constraints that limit behavior in transacting as well as other social interactions. Laws dictate what people cannot legally do and a strong adherence to the rule of law signifies that these laws are enforced and uniformly applied. Observance of the law determines if these constraints are actually binding.[10]

The democracy variable, DEM, takes the value one if a country is democratic and zero otherwise. Data for DEM comes from Papaioannou and Siourounis (2008a,b). We do not use the political liberalization classification of GT since they do not distinguish between full and partial democratizations. Barro (1996) finds differences between partial and full democratizations as to how they affect growth and we want to allow for such differences here. We also find more of the classifications in GT to be controversial. PS do not proffer any specific definition of democracy but they do list four criteria that a democracy must have: free, competitive, and fair elections; elections involving actual transfers of power (as opposed to the military, for example, setting aside the results of an election); broad suffrage in that no sizable part of the population is excluded as in South Africa during apartheid; and political stability. Except for political stability, these criteria follow definitions from Huntington (1991) and Dahl (1971) in that decision makers are determined by contested elections where suffrage is broad. Huntington (1991) does not

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[10] Glaeser et al. (2004) would not consider adherence to the rule of law to be an appropriate measure of these constraints because they argue that a nondemocratic leader could *choose* to enforce and apply the law uniformly. A large value in this index, then, would not represent a constraint upon leaders forcing them to act in such a manner but only a "good" policy choice. Therefore, it is not an appropriate measure of institutions. However, even in these cases such as with Yew in Singapore, the leader's choice does provide constraints on the vast majority of the populace and so we still consider it as an appropriate measure of institutions.

presuppose that democracies are effective at establishing law and order or enacting policies for the public good such as ones that promote widespread economic growth.

Using a variety of sources, PS ascertain when a democratization episode occurred. They further divide democratization episodes into "full" and "partial" ones. A full democratization occurs when Freedom House designates the country as fully free AND when the country has a Polity IV score above seven (on a -10 to +10 scale) on its composite democracy index.   See Marshall and Jaeggers (2004) for a description of the Polity IV political data. A partial democracy considers a more lenient standard. A country need only be fully or partially free according to Freedom House and have a Polity IV score above zero.

Let $DEM\_F_{i,t} = 1$ for country i in period t that is fully democratic and zero otherwise whereas let $DEM\_P_{i,t} = 1$ if a country is fully OR partially democratic and zero otherwise. Therefore, the observations for which DEM_F equals one is a subset of those for which DEM_P equals one. A country democratizes (either fully or partially) when DEM_F or DEM_P goes from zero to one.[11] When we consider specifications with five year windows, we average over each period and so DEM_F and DEM_P, respectively, can take one of six values: 0.0, 0.2, 0.4, 0.6, 0.8, and 1.0.

The classifications from PS stem from the Freedom House and Polity IV ratings. To be fully democratic, a country must be considered as such in both of these sources.

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[11] Data in PS extend to 2003 but ours end in 2010. We extend their dataset by continuing their classifications for the additional years. Namely, a country is democratic when it receives an F in Freedom House and a Polity score above 7. Democracies where a country is "partly free" according to Freedom House and have a Polity score above zero are "partial democracies". Our classification, however, slightly differs from that in PS. For a country to democratize according to PS, the resulting democracy must be sustained. Recent events cause past classifications to be reconsidered. For example, a military coup in Thailand in September 2006 removes Thailand from the set of democracies in our sample. Nevertheless, our results are robust to Thailand's change in classification.

Moreover, democratization is only considered to have taken place when the country does not later revert back to authoritarianism. That is, democratic reforms are defined to be permanent. Therefore, a disadvantage of this classification system is that it misses any effects from temporary democratizations. However, an advantage is that one can better interpret the coefficients on the DEM variable and interactive terms since they are not driven by movements away from democracy (that is, a movement from DEM equals one to DEM equals zero). Still, very few countries that democratized reverted back to authoritarianism during the sample period, and so we do not believe such concerns are paramount. Nevertheless, to check robustness, we will also employ the ordinal measures of democracy from the Freedom House political rights index (DEM_FH) and the Polity measure of democracy and autocracy (DEM_PY).[12] To be more consistent across specifications, we rescale the original Freedom House and Polity variables to fit in the zero-to-one interval with higher values denoting more democracy.

The appendix lists the sample of countries and when democratization events occurred.

Section 4: Endogeneity Concerns

For the model in (1) to answer the questions we raise, two further conditions must be satisfied. The first is that democratization is not driven by economic growth nor do the two stem from some third factor. Instead, causality should run from democratization to

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[12] A problem, though, with the Freedom House and Polity measures regards its scale from one to seven where lower numbers denote more political freedoms. It is not clear how one should interpret this index. Does the 1-7 Freedom House categorization of political rights merely represent ordinal groupings? Or, can its increments be taken literally in that, for example, the move from 3 to 2 represents the same degree of movement towards democracy as a move from 4 to 3? If the Freedom House categorization is merely ordinal, then the direct use of these indices to measure change becomes more problematic.

growth so that the coefficients on the DEM terms in (1) actually do predict the effect of becoming a democracy upon economic growth. Second, to better understand how the rule of law influences this effect that democratization has upon growth, democratization should not systematically influence the rule of law. If it does, then the model of section 3 needs to formally account for this influence when examining the effect that democratization has upon economic growth.

We first explain why we take DEM in (1) to be exogenous and not driven by changes in income. PS, Rodrik and Wacziarg (2005), and GT make a similar assumption, also treating democratization as exogenous and so our specification does not run counter to these.[13] Therefore, our methodology is comparable to theirs, implying that our findings are comparable as well. Second, despite the often reported finding of a positive correlation between democracy and income, Acemoglu et al. (2008) report that the association disappears once one controls for long-run historical factors that could have promoted both high income and democracy.[14] Equation (1) includes fixed effects and so thereby implicitly controls for long-run factors that could potentially influence both income and democracy. Conducting regressions similar to the ones in Acemoglu et al. (2008) produces similar findings, namely that income is not strongly associated with democracy once country fixed effects are included in the specification. These results are available upon request.

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[13]Nickell (1981) shows that biases from the inclusion of lagged dependent variables on the right hand side are small when the time dimension goes to infinity. Judson and Owen (1999) report that biases on these right hand side variables are less than 3% when using more than 20 periods. This provides some justification of the estimation methodologies of the aforementioned studies. In specifications with annual data, we also have over 20 years of data for all of our countries and so focus upon fixed effects methodologies.

[14] Przeworski and Limongi (1997) also find that income is not a causal factor of democracy.

The other concern is that democratization either systematically influences the rule of law or rule of law is and democracy are so closely related that the two should not be considered separately. According to PS, 18 countries fully democratized between 1984 and 2010.[15] These countries are listed in table 1 along with the year each democratized. Table 1 also shows what happened to the average value of the rule of law index before and after democratization occurred. In 7 of the 18 cases, the rule of law index increased by more than 0.17 points (corresponding to a one interval increase in the original index). But in the other 11 cases, the rule of law score either fell or increased by no more than 0.17. Nor were such movements monotonic. Of these 18 countries, only Chile, Mali, Mongolia, Panama, and Senegal saw either no change in the rule of law index or a (weakly) monotonic increase in this index following democratization. Bulgaria, El Salvador, and Uruguay saw (weakly) decreasing movements in this index. The remaining ten countries saw nonmonotonic movements as to how the rule of law index behaved after democratization.

We also considered the 27 cross-country correlations (one for each year between 1984 and 2010) between LAW and DEM_F. Since most of our empirical specifications will remove the mature democracies from the sample (these countries are identified in the table in the appendix), we also remove these countries when calculating these correlations. The correlations between LAW and DEM_F go from a minimum of -0.12 to a maximum of 0.28. Therefore, we find no general co-movement between becoming democratic and changes in the rule of law. This is not surprising given the various

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[15] We present full democratizations instead of partial democratizations since the former constitute less ambiguous cases of "democratization". The cases that PS consider as partial democratizations are treated as nondemocracies.

country experiences mentioned above and further evidence that law and order and democracy are distinct concepts.

Panel B of Table 1 compares rule of law measures between 1984 and 2010 for different sets of countries. For our entire sample of 118 countries, the rule of law index increased by an average of 0.09 during these 26 years. The median increase was 0.08. For the countries that were not always democratic, rule of law increased by an average of 0.12 points. However, within this subset of countries that were nondemocratic in 1984, the rule of law increased more in countries that remained nondemocratic than in the ones that fully democratized after 1984 and so no evidence arises that democratization boosted LAW. Panel C shows other summary statistics for LAW across different sets of countries. The most important lines are the two that focus on the countries that began nondemocratic. The rule of law in the countries that became democratic does not appear to have behaved differently than that in countries that remained nondemocratic. If democratization had big effects on LAW then we should expect to see a substantial increase in the standard deviation of LAW for those countries that became democratic in the sample period compared to those countries that remained autocratic or democratic throughout the period. Instead, the standard deviation for LAW in countries that underwent a democratization in our sample period lies between those of the countries that did not transition.

Panel D of Table 1 compares two types of variation in the sample. The top row presents the mean of the 118 within-country standard deviations of LAW over time. The bottom row of panel D presents the standard deviation of the 118 within-country means

of LAW. What the panel then implies is that more of the variation in LAW occurs across countries rather than over time within the same country.

Figure 3a presents a similar picture. The rule of law index is higher on average in the countries that were always democratic but movements in the average of the rule of law index in all three groups are similar. In fact, differences in the evolution of the rule of law index between those countries that remained autocratic and those countries that became democratic (denoted as transitional countries in the figure) during the sample period are small. Therefore, we do not find any clear indication that democratization generally contributed to law and order.[16] Figure 3b shows that economic growth behaved similarly *on average* across these three sets of countries. Of course, the figure does not control for other factors or consider more refined associations. Table 1 and figures 3a and 3b provide some justification for taking political reform and the rule of law to be exogenous in our empirical specification.

Despite the above arguments, we recognize that skepticism regarding the exogeneity of income or the rule of law can still exist. Therefore, we will also employ the system-GMM estimation methodology of Arellano and Bover (1995) and Blundell and Bond (1998). In the case of persistent explanatory variables (which is likely to be the case for our variables), Bond et al. (2001) suggest that the difference-GMM estimator can produce biased coefficients since the lagged levels of these variables serve as weak instruments. Alternatively, system-GMM performs estimation in both first differences

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[16] Eicher and Schreiber (2010) use democratization as an instrument for economic reform for the transition countries of Eastern Europe and the former Soviet Union, claiming that democratization caused these reforms, including promotion of what we call "economic institutions". This view contrasts with ours. However, Eicher and Schreiber (2010) only apply this assumption to transition countries, stating that measures such as rule of law are much more stable for other countries. Moreover, given the ICRG data we use, very few transition countries are in our sample. For those that are included, a robustness check (described below) shows that these few transition countries in our sample are not driving results.

and levels which obtains more moment conditions thereby increasing efficiency.[17] See

Blundell and Bond (1998), Hauk and Wacziarg (2009) and Roodman (2006) for further

details.

We consider the following model:

$$Y_{i,t} = \alpha_i + \beta_t + \gamma * Y_{i,t-1} + \delta * DEM_{i,t} + \zeta * LAW_{i,t} + \eta * DEM_{i,t} * LAW_{i,t} + \tau * X_{i,t} + \varepsilon_{i,t} \quad (2)$$

The natural log of GDP per capita, Y, is now the dependent variable. Its lag, democracy,

the rule of law, and their interaction fall on the right hand side. Income, democracy, and

the rule of law are all assumed to be endogenous. The instruments come from lags two

through five of the endogenous variables. We consider a two-step estimator. Equation (2)

considers income levels since differencing (2) then produces growth rates.

Section 5: Results

A. Baseline results

Panel A of Table 2 produces the coefficient estimates for the simplest

specifications of equation (1). Column one considers DEM_F as the measure of

democracy and includes all countries for which data is available. Not surprisingly, the

coefficient on LAW is positive and statistically significant. The coefficient upon DEM_F

is also positive, statistically significant, and large in magnitude. What is also interesting is

the negative coefficient on the DEM_F – LAW interactive term. Column 2 considers the

same specification but removes the mature democracies so as to better compare new

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[17]A critical assumption, however, of system-GMM is that the fixed effects are not correlated with changes
in the endogenous variables.

democracies and autocracies. The coefficients are slightly smaller in magnitude but remain large and are statistically significant. For more consistent comparison, we retain the smaller sample in the subsequent columns of the table but results remain robust to including mature democracies. We consider column 2 to be our baseline specification.

To see how the effects of democratization compare across countries, panel B of Table 2 considers three hypothetical countries. Assume that the three countries all have different values of LAW and all three democratize so that DEM_F goes from zero to one. These three countries are all initially nondemocracies. Country A democratizes but has little adherence to the rule of law (LAW = 0). For country A and using the coefficient estimates from column 2 in the top panel of the table, growth increases by 3.39 percentage points with a 95% confidence interval of (0.7, 6.7). Even the lower end of this confidence interval suggests nontrivial growth effects. Now consider some country B with some adherence to the rule of law (LAW equals 0.5) that democratizes. Democratization raises growth by 0.6 percentage points, albeit not significant at the 10% and so thereby tempering any conclusions as the 95% confidence interval of (-1.2, 2.5) contains large positive and negative growth rates. Finally, consider a country C where the rule of law is strictly enforced (LAW = 1) that democratizes. Democratization now results in a predicted *decrease* in the growth rate of 2.11 percentage points though, again, the 95% confidence interval of (-5.2, 1.0) clouds conclusions about whether growth would increase or decrease in this case. The possible negative effect of democratization upon growth where law and order prevails is also interesting. Perhaps the great political changes brought about by becoming democratic create greater uncertainty, including to

what extent law and order will continue to prevail. This uncertainty could then have negative effects upon economic growth.

Figure 4 shows the predicted growth rates for both democracies and autocracies across the seven different values of LAW. Below a LAW value of 0.67 (a value of 4 in the original ICRG data), democracies are predicted to grow faster. For high values of LAW, however, autocracies are predicted to grow faster. We do not interpret this figure to imply that the combination of democracy and strong law and order are bad for growth. For one, figure 4 sets the fixed effects to be zero. To the extent that fixed effects are higher for high LAW – high democracy countries, then these countries will still grow faster. Second, the predicted values in figure 4 come from the coefficient estimates in column 2 of Table 2 which are driven by the within country variation. What the figure suggests is that improvements in law and order raise growth in both types of countries but have bigger growth effects in autocracies, again suggesting that the two are substitutes in how they affect growth.

Column three considers a less strict definition of democracy with DEM_P replacing DEM_F. The coefficient on the democracy – rule of law interaction term decreases in magnitude but only slightly. There is now more support that growth is positive for countries with values of LAW closer to 0.5. Column four replaces DEM_P with the (rescaled) Freedom House measure, DEM_FH. The economic magnitudes show the same pattern but are higher than using the dummies from PS. Column five considers the Polity measure of democracy. The coefficient on the interactive term is negative but not statistically significant. However, the economic magnitudes again suggest large differences as we consider a hypothetical move on our rescaled Polity index from zero to

one. Democracy is predicted to raise growth for low and middle LAW countries but not for high LAW countries.

Column 6 replaces LAW with investment profile index (INV_PROF), also from ICRG in order to ensure that results are not driven by the specific variable we use to account for economic institutions. Investment profile is measured on a zero to twelve integer scale with higher values denoting less investment risk due to government expropriation or obstacles in repatriating profits. Although investment profile applies most directly to foreign direct investment within a country, we presume that threats to domestic investment are correlated.[18] The results in column 6 mirror previous ones. Finally, column 7 considers GDP Per capita data from the World Bank's World Development Indicators (measured in constant international dollars). Results remain robust.

Table 3 considers analogous specifications to those in Table 2 but uses system-GMM for estimation. Results are robust in that the coefficients on the democracy terms are positive whereas the coefficients on the interactive terms are negative. The Hansen and AR(2) diagnostic checks generally fall in acceptable levels.

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[18] Studies such as Knack and Keefer (1995) and Acemoglu et al. (2001) used the risk of government expropriation of foreign investment to measure property rights. Such a measure is associated with law and order but not identical to it. Arbitrary expropriations of property could be an example of non-adherence to law and order perpetrated by a government. Of course, a governmetn could generally create an "orderly" environment even if it sometimes conducted such expropriates. The reason we use the investment profile measure from ICRG is that it considers government expropriation of property and that the specific expropriation of property index used in the aforementioned studies is no longer available. The cross-sectional correlation between LAW and INV_PROF varies from 0.35 to 0.68 across our 1984 to 2010 sample period, suggesting to us that the two measures capture related but not identical concepts.

B. Further Robustness Checks

Table 4 conducts more robustness checks by considering other time horizons and empirical specifications. The first column considers annual data so as to better pinpoint the timing of political change. The results change little nor do they change when we consider the other specifications using annual data.

Column 2 considers a specification more similar to that used in GT. They include an interactive term with their democracy variable and a dummy variable that equals one for formerly socialist countries. They also consider economic liberalizations and include a dummy variable for countries that had experienced such economic reforms to control for the possibility that economic liberalizations accompanying democratizations are the true catalyst for higher growth. Denote this dummy variable as REFORM. REFORM comes from Wacziarg and Welch (2008) and is binary, equaling one if the country follows open trade policies and zero otherwise. As in GT, we only set REFORM equal to one when an economic liberalization is never undone and so only consider permanent liberalizations. Like GT, we assume that openness is correlated with more general economic liberalizations. As in GT, we also include a democracy-socialist legal origin interactive term to control for the possibility that democratization had different effects in Eastern Europe and the former Soviet states. Column 3 removes these former socialist countries.

Taken together, the results from columns 2 and 3 suggest that our findings are not driven by the unique experiences that occurred in Eastern Europe due to the downfall of the Soviet Union. In fact, coefficient estimates now increase in magnitude.

Columns 4, 5, and 6 include control variables that were also employed in PS. We include the lagged growth rate as well as the lags of the investment share, the share of government purchases in GDP, and the trade share. These variables also come from version 7.1 of the Penn World Tables. Column 6 considers a measure of human capital, the average level of schooling in the above-15 population from Barro and Lee (2010). Associations weaken now with these added control variables but the coefficient on the interactive term remains large in magnitude. Somewhat surprisingly, the coefficient on the lagged human capital variable is negative, suggesting that human capital is negatively associated with growth. Such a finding is not unprecedented (see Pritchett, 1991) and could be caused by transitional costs of human capital driven labor re-allocations within the economy. Another possibility is that human capital is endogenous and could be driven by persistent growth shocks thereby created biased coefficient estimates.

Finally in column 7, we consider two democracy variables simultaneously. Let PARTIAL equal DEM_P − DEM_F. That is, partial equals one for all the countries that experienced partial but not full democratizations. The magnitude of the coefficient on DEM_F*LAW is greater than that upon PARTIAL*LAW although differences are slight. Nevertheless, the coefficients on DEM_F and DEM_F*LAW are more precisely estimated than are their counterparts using PARTIAL and so associations are statistically stronger.[19]

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[19] A further set of robustness checks included other interactive terms (Z*DEM_F for some characteristic Z) in the model to better account for the possibility that it is not the rule of law that matters for how democracy affects growth but other factors associated with the rule of law. We considered such factors as location (whether or not the country is in the tropics or in sub-Saharan Africa, whether the country was a former colony, the degree of ethnic heterogeneity, reliance on natural resources, and the level of schooling. We considered these variables because other researchers have considered how these various factors are associated with the rule of law and these characteristics, with the possible exception of schooling, are presumably exogenous to current economic institutions. Their inclusion does not affect the conclusions of the paper that the rule of law affects how democracy is associated with economic growth.

Table 5 reporting the system-GMM results considers some of the same variables as does Table 4 with one exception: since lagged income is already a right-hand side variable we do not consider the analog to the specification in column 4 of Table 4 that included the lagged growth rate. The coefficient upon the LAW*DEM_F interaction term remains negative and significant. Unfortunately when using annual data, the number of instruments (217) far exceeds the number of cross-sections (92) even when using just the second lags of the endogenous variables as instruments. This is reflected in the high p-value of the Hansen test.[20] In column 5 the coefficient upon schooling becomes positive, countering the negative association found with the fixed effects estimations. Another difference is that in column 6, the size of the coefficients are greater on the PARTIAL variables than they are on the DEM_F ones.

Section 6: Conclusion

The above results show that the positive association between democratization and economic growth weakens in countries where the rule of law is presumed to be strong. An implication from these results is that the effects of democratization can be quite different across countries depending upon the characteristics of other institutions within the country. Not taking account of these differences can then lead to misleading findings as to the benefits of democratization. We find that the benefits to democratization are highest where economic institutions such as law and order are weakest. In fact, we even find evidence that democratization lowers growth where law and order already prevail. We speculated that the uncertainty caused by changing political regimes and whether law

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[20] In columns 2 and 4 we only use the two period lags as instruments in order to keep the number of instruments less than the number of cross-sections.

and order would continue to prevail explains this finding although future work can, hopefully, provide more evidence for or against this conjecture. Moreover, finding other characteristics that could influence how democratization affects economic growth is also warranted.[21]

Better understanding differences across countries is important for sustaining democratic reforms (which we believe are beneficial in their own right). If growth outcomes following democratic change fail to meet expectations then support for democracy could wane. By identifying cases where material benefits could be quite low, we hope that this scenario is averted in that expectations are kept in check. Furthermore, the poorest countries often lack institutions to promote productive activities and are less likely to be democratic. Since these are the countries where democratic change can have the greatest effects on growth, we hope that such knowledge can help spur reform in these countries. To some extent, this finding differs from the arguments of Zakaria (2003). He argues that for many poor, nondemocratic countries, long-run outcomes are best pursued by a (relatively) benevolent dictator promoting pro-growth policies. Democratization only then follows once incomes have sufficiently increased. Our results do not directly speak to this conjecture but we do find that the benefits of democratization are highest where institutional environments are least advantageous for economic growth. Perhaps long-run benefits could be increased if democratization efforts are supported sooner rather than later.

Finally, the results of this paper can also help understand past findings. Rodrik and Wacziarg (2005) and Sylwester (2009) find that democratization in sub-Saharan

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[21] For example, Collier (2000) and Bluedorn (2001) consider how the effects of democracy upon economic growth could differ depending upon the degree of ethnic diversity.

Africa increases economic growth more than it does in other regions. Perhaps this finding stems from the weaker economic institutions commonly found in many of these countries.[22] Unfortunately, date for LAW is not available for Benin or Cape Verde. These two countries made strong democratic reforms in the early 1990's and so one would want to include these countries in any study examining this issue further, another area we leave for future research.

Appendix

The countries and democratization events according to PS are listed in Table 6.

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[22] See Englebert (2000) for a survey of economic institutions in Africa.

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Table 1
Full Democratizations and Law and Order (LAW), 1984 - 2010

	Panel A		
		Average LAW Score	
Country	Year Fully Democratized	Before Democ.	After Democ.
Brazil	1985	0.60	0.47
Bulgaria	1991	0.83	0.66
Chile	1990	0.67	0.80
El Salvador	1994	0.21	0.42
Ghana	1996	0.36	0.40
Guyana	1992	0.17	0.45
Hungary	1990	0.83	0.79
Mali	1992	0.33	0.50
Mexico	1997	0.51	0.40
Mongolia	1993	0.30	0.67
Panama	1994	0.33	0.50
Philippines	1987	0.17	0.43
Poland	1990	0.67	0.78
Romania	1990	0.33	0.70
Senegal	2000	0.31	0.50
South Africa	1994	0.33	0.43
South Korea	1988	0.47	0.72
Uruguay	1984	0.50	0.47

Panel B: Change in LAW over time		
	Difference in LAW (2010 Value minus 1984 Value)	
Sample	Mean	Median
All countries	0.090	0.083
Always Democratic	0.034	0.000
Not Always Democratic (NAD)	0.119	0.167
NAD but democratized	0.079	0.090
NAD but did not democratize	0.132	0.167

Panel C: Descriptive Statistics for LAW			
Sample	Mean	Median	Std. Deviation
All Countries	0.60	0.66	0.25
Always Dem	0.76	0.83	0.25
Not Always Dem (NAD)	0.52	0.50	0.21
NAD and stayed Nondem.	0.51	0.50	0.20
NAD but fully democratized	0.53	0.50	0.22

Panel D	
Average of Within Country Standard Deviations	0.12
Standard Deviation of Within Country Averages	0.22

LAW denotes the law and order index from ICRG. Always Dem denotes the countries that were democratic throughout the sample period. NAD countries are those that began as nondemocratic. Some of the NAD countries remained nondemocratic throughout the sample period (row 4 of panel C) and some fully democratized (row 5 of panel C).

Table 2: Fixed Effect Regressions
Panel Data Regressions, Five-Year Windows, 1986-2010
Dependent variable is the growth rate of real GDP per capita (PPP)

Panel A: Coefficient Estimates

	(1)[a]	(2)	(3)	(4)	(5)	(6)[b]	(7)[c]
DEM_F	4.900 (1.523)***	3.386 (1.694)**				3.406 (2.099)	2.431 (1.449)*
DEM _P			3.712 (1.331)***				
DEM_FH				11.032 (4.270)**			
DEM_PY					5.509 (2.606)**		
LAW	4.951 (1.847)***	4.159 (1.872)**	4.590 (1.899)**	9.194 (3.146)***	4.383 (2.800)		5.172 (2.186)**
DEM*LAW	-6.997 (2.331)***	-5.499 (2.663)**	-4.892 (2.273)**	-15.520 (6.374)***	-6.904 (4.401)		5.314 (2.651)**
INV_PROF						7.035 (2.221)***	
DEM_F* INV_PROF						-5.203 (2.862)*	
Observations	590	460	460	460	433	460	430
Number of countries	118	92	92	92	89	92	88
R-squared	0.29	0.33	0.33	0.34	0.34	0.34	0.35
Within	0.08	0.12	0.13	0.14	0.12	0.14	0.13
Between	0.19	0.19	0.24	0.18	0.13	0.13	0.04

Panel B: Estimated Effects of Democratization upon Growth for Different Values of Law

LAW=0	4.90**	3.39**	3.71***	11.032**	5.51**	3.406	2.43*
LAW=0.5	1.42	0.64	1.27**	3.27**	2.06**	0.80	-0.23
LAW=1.0	-2.13	-2.11	-1.18	-4.49*	-1.40	-1.80	-2.88*

White period standard errors in parentheses
*** and ** denotes significance at the 1% and 5% levels, respectively.
Coefficient estimates for country and period fixed effects omitted to ease presentation.
Wald Coefficient Tests used to determine statistical significance in Panel B
[a]All countries included. [b]In Column 5 of Panel B, LAW is replaced with INV_PROF
[c]GDP data from World Bank

Table 3: System-GMM
Panel Data Regressions, Five-Year Windows, 1986-2010
Dependent variable is real GDP per capita (PPP)

Panel A: Coefficient Estimates

	(1)[a]	(2)	(3)	(4)	(5)	(6)[b]	(7)[c]
Lagged GDP Per Capita	0.954 $(0.005)^{***}$	0.946 $(0.005)^{***}$	0.953 $(0.003)^{***}$	0.958 $(0.005)^{***}$	0.984 $(0.004)^{***}$	0.953 $(0.006)^{***}$	0.954 $(0.003)^{***}$
DEM_F	0.185 $(0.024)^{***}$	0.178 $(0.021)^{***}$				0.143 $(0.016)^{***}$	0.115 $(0.024)^{***}$
DEM _P			0.186 $(0.016)^{***}$				
DEM_FH				0.363 $(0.049)^{***}$			
DEM_PY					0.137 $(0.040)^{***}$		
LAW	0.381 $(0.042)^{***}$	0.460 $(0.034)^{***}$	0.465 $(0.029)^{***}$	0.558 $(0.039)^{***}$	0.337 $(0.043)^{***}$		0.341 $(0.037)^{***}$
DEM*LAW	-0.219 $(0.038)^{***}$	-0.196 $(0.035)^{***}$	-0.213 $(0.030)^{***}$	-0.382 $(0.089)^{***}$	-0.082 (0.071)		-0.097 $(0.036)^{***}$
INV_PROF						0.402 $(0.033)^{***}$	
DEM_F* INV_PROF						-0.162 $(0.027)^{***}$	
Observations	585	455	455	455	428	455	421
Number of countries	118	92	92	92	89	92	88
AR(2) Test p-value	0.17	0.20	0.22	0.21	0.36	0.19	0.94
Hansen Test p-value	0.07	0.23	0.23	0.19	0.43	0.28	0.55

Panel B: Estimated Effects of Democratization upon Growth for Different Values of Law

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
LAW=0	0.19^{***}	0.18^{***}	0.19^{***}	0.36^{***}	0.147^{***}	0.14^{***}	0.12^{***}
LAW=0.5	0.08^{***}	0.08^{***}	0.08^{***}	0.17^{***}	0.10^{***}	0.06^{***}	0.07^{***}
LAW=1.0	-0.03^{**}	-0.02	-0.03	-0.02	0.06	-0.02^{*}	0.02

White period standard errors in parentheses
*** and ** denotes significance at the 1% and 5% levels, respectively.
Coefficient estimates for period fixed effects omitted to ease presentation.
Wald Coefficient Tests used to determine statistical significance in Panel B
[a]All countries included. [b]In Column 5 of Panel B, LAW is replaced with INV_PROF
[c]GDP data from World Bank

Table 4: Robustness Checks for Fixed Effect Regressions
Panel Data Regressions
Dependent variable is the growth rate of real GDP per capita (PPP)

Panel A: Coefficient Estimates

	(1)	(2)	(3)[a]	(4)	(5)	(6)	(7)[b]
Data Frequency	Annual	5-Yr	5-YR	5-YR	5-YR	5-YR	5-YR
DEM_F	2.825	2.513	4.336	3.672	3.791	2.805	3.960
	$(1.319)^{**}$	$(1.469)^{*}$	$(1.681)^{**}$	$(1.877)^{*}$	$(1.810)^{**}$	(1.789)	$(1.586)^{**}$
LAW	2.890	4.450	6.056	4.792	3.974	3.476	6.589
	$(1.316)^{**}$	$(1.865)^{**}$	$(1.862)^{***}$	$(2.147)^{**}$	$(2.015)^{**}$	(2.396)	$(2.353)^{***}$
DEM_F*LAW	-4.292	-5.724	-8.219	-5.657	-4.978	-5.357	-5.955
	$(2.137)^{**}$	$(2.444)^{**}$	$(2.728)^{***}$	$(2.908)^{*}$	$(2.799)^{*}$	$(3.048)^{*}$	$(2.749)^{**}$
SOC*DEM_F		2.939					
		$(1.742)^{*}$					
REFORM		1.650					
		$(0.766)^{**}$					
Lagged GROWTH				-0.266	-0.253	-0.272	
				$(0.088)^{***}$	$(0.091)^{***}$	$(0.093)^{***}$	
Lagged Investment				-0.003			
				(0.004)			
Lagged Government				-0.010			
				(0.009)			
Lagged Trade				-0.035			
				(0.022)			
Schooling						-1.691	
						$(0.692)^{**}$	
PARTIAL							3.153
							(2.248)
PARTIAL*LAW							-5.287
							(3.726)
Observations	2443	394	415	455	455	400	455
Number of countries	92	79	83	92	92	81	92
R-squared	0.12	0.43	0.30	0.38	0.41	0.39	0.34
Within	0.06	0.14	0.09	0.19	0.22	0.14	0.14
Between	0.15	0.13	0.02	0.03	0.02	0.04	0.24

Panel B: Estimated Effects of Democratization upon Growth for Different Values of Law

LAW=0	2.83**	2.51*	4.34**	3.67*	3.79**	2.80
LAW=0.5	0.68	-0.35	0.33	0.84	1.30	0.13
LAW=1.0	-1.47	-3.21**	-3.88**	-1.99	-1.19	-2.55

White period standard errors in parentheses
*** and ** denotes significance at the 1% and 5% levels, respectively.
Coefficient estimates for country and period fixed effects omitted to ease presentation.
Wald Coefficient Tests used to determine statistical significance in Panel B
[a]Formerly socialist countries removed
[b] Given the two democracy variables in column 7, we leave column B blank

Table 5: Robustness Checks for System-GMM Regressions
Panel Data Regressions
Dependent variable is real GDP per capita (PPP)

Panel A: Coefficient Estimates

	(1)	(2)	(3)[a]	(4)	(5)	(6)
Data Frequency	Annual	5-Yr	5-YR	5-YR	5-YR	5-YR
Lagged GDP Per Capita	0.998 $(0.009)^{***}$	0.960 $(0.012)^{***}$	0.944 $(0.004)^{***}$	0.920 $(0.008)^{***}$	0.943 $(0.003)^{***}$	0.945 $(0.007)^{***}$
DEM_F	0.077 $(0.038)^{**}$	0.123 $(0.040)^{**}$	0.161 $(0.024)^{***}$	0.220 $(0.042)^{***}$	0.146 $(0.019)^{***}$	0.229 $(0.026)^{***}$
LAW	0.098 $(0.021)^{***}$	0.285 $(0.054)^{***}$	0.404 $(0.028)^{***}$	0.317 $(0.041)^{***}$	0.381 $(0.027)^{***}$	0.518 $(0.045)^{***}$
DEM_F*LAW	-0.079 $(0.023)^{***}$	-0.119 $(0.077)^{***}$	-0.138 $(0.042)^{***}$	-0.230 $(0.073)^{***}$	-0.162 $(0.029)^{***}$	-0.249 $(0.046)^{***}$
SOC*DEM_F		0.019 (0.023)				
REFORM		0.132 $(0.024)^{***}$				
Investment				0.004 $(0.0007)^{***}$		
Government				-0.007 $(0.001)^{***}$		
Trade				0.001 $(0.0001)^{***}$		
Schooling					0.006 $(0.001)^{***}$	
PARTIAL						0.305 $(0.027)^{***}$
PARTIAL*LAW						-0.498 $(0.063)^{***}$
Observations	2443	359	374	455	400	455
Number of countries	92	72	77	92	81	92
AR(2) Test p-value	0.65	0.52	0.20	0.17	0.19	0.19
Hansen Test p-value	1.00	0.30	0.35	0.28	0.28	0.29

Panel B: Estimated Effects of Democratization upon Growth for Different Values of Law						
LAW=0	0.08**	0.12**	0.16***	0.22***	0.15***	0.23***
LAW=0.5	0.04	0.02***	0.09***	0.11	0.07***	0.10***
LAW=1.0	0.00	-0.01	0.02	-0.01	-0.02	-0.02

White period standard errors in parentheses
*** and ** denotes significance at the 1% and 5% levels, respectively.
Coefficient estimates for period fixed effects omitted to ease presentation.
Wald Coefficient Tests used to determine statistical significance in Panel B
[a] Formerly socialist countries removed

Table 6: Sample of Countries and Democracy Status	
Country	**Classification**
Albania	Partial Democratization: 1992
Algeria	Always Autocracy
Angola	Always Autocracy
Argentina	Always Democracy
Australia	Mature Democracy
Austria	Mature Democracy
Bahamas	Always Democracy
Bahrain	Always Autocracy
Bangladesh	Partial Democratization:1991
Belgium	Mature Democracy
Bolivia	Always Democracy
Botswana	Always Democracy
Brazil	Full Democratization:1985
Brunei	Always Autocracy
Bulgaria	Full Democratization:1991
Burkina Faso	Always Autocracy
Cameroon	Always Autocracy
Canada	Mature Democracy
Chile	Full Democratization:1990
China	Always Autocracy
Colombia	Always Democracy
Congo, Dem. Rep.	Always Autocracy
Congo, Republic of	Always Autocracy
Costa Rica	Mature Democracy
Cote d`Ivoire	Always Autocracy
Cuba	Always Autocracy
Cyprus	Always Democracy
Denmark	Mature Democracy
Dominican Republic	Always Democracy
Ecuador	Always Democracy
Egypt	Always Autocracy
El Salvador	Full Democratization:1994
Ethiopia	Partial Democratization:1995
Finland	Mature Democracy
France	Mature Democracy
Gabon	Always Autocracy
Gambia, The	Always Autocracy
Ghana	Democratization:1996
Greece	Mature Democracy
Guatemala	Partial Democratization:1996
Guinea	Always Autocracy
Guinea-Bissau	Always Autocracy

|	
Guyana	Full Democratization:1992
Haiti	Always Autocracy
Honduras	Always Democracy
Hungary	Full Democratization:1990
Iceland	Mature Democracy
India	Always Democracy
Indonesia	Partial Democratization:1999
Iran	Always Autocracy
Iraq	Always Autocracy
Ireland	Mature Democracy
Israel	Mature Democracy
Italy	Mature Democracy
Jamaica	Always Democracy
Japan	Mature Democracy
Jordan	Always Autocracy
Kenya	Always Autocracy
Korea, Republic of	Full Democratization:1988
Kuwait	Always Autocracy
Lebanon	Always Autocracy
Liberia	Always Autocracy
Libya	Always Autocracy
Luxembourg	Mature Democracy
Malawi	Partial Democratization:1994
Malaysia	Always Autocracy
Mali	Full Democratization:1992
Malta	Always Democracy
Mexico	Full Democratization:1997
Mongolia	Full Democratization:1993
Morocco	Always Autocracy
Mozambique	Partial Democratization:1994
Namibia	Always Democracy
Netherlands	Mature Democracy
New Zealand	Mature Democracy
Nicaragua	Partial Democratization:1990
Niger	Always Autocracy
Nigeria	Partial Democratization:1999
Norway	Mature Democracy
Oman	Always Autocracy
Pakistan	Always Autocracy
Panama	Full Democratization:1994
Papua New Guinea	Always Democracy
Paraguay	Partial Democratization:1993
Peru	Always Democracy
Philippines	Full Democratization:1987

Poland	Full Democratization:1990
Portugal	Mature Democracy
Qatar	Always Autocracy
Romania	Full Democratization:1990
Saudi Arabia	Always Autocracy
Senegal	Full Democratization:2000
Sierra Leone	Always Autocracy
Singapore	Always Autocracy
Somalia	Always Autocracy
South Africa	Full Democratization:1994
Spain	Mature Democracy
Sri Lanka	Always Democracy
Sudan	Always Autocracy
Suriname	Partial Democratization:1991
Sweden	Mature Democracy
Switzerland	Mature Democracy
Syria	Always Autocracy
Tanzania	Partial Democratization:1995
Thailand	Always Autocracy
Togo	Always Autocracy
Trinidad &Tobago	Always Democracy
Tunisia	Always Autocracy
Turkey	Always Democracy
Uganda	Always Autocracy
United Arab Emirates	Always Autocracy
United Kingdom	Mature Democracy
United States	Mature Democracy
Uruguay	Full Democratization:1985
Venezuela	Always Democracy
Vietnam	Always Autocracy
Zambia	Partial Democratization:1991
Zimbabwe	Always Autocracy

Figure 1: Relative GDP for Chile and South Africa
Sixteen Years Before Democratization Event and Subsequently
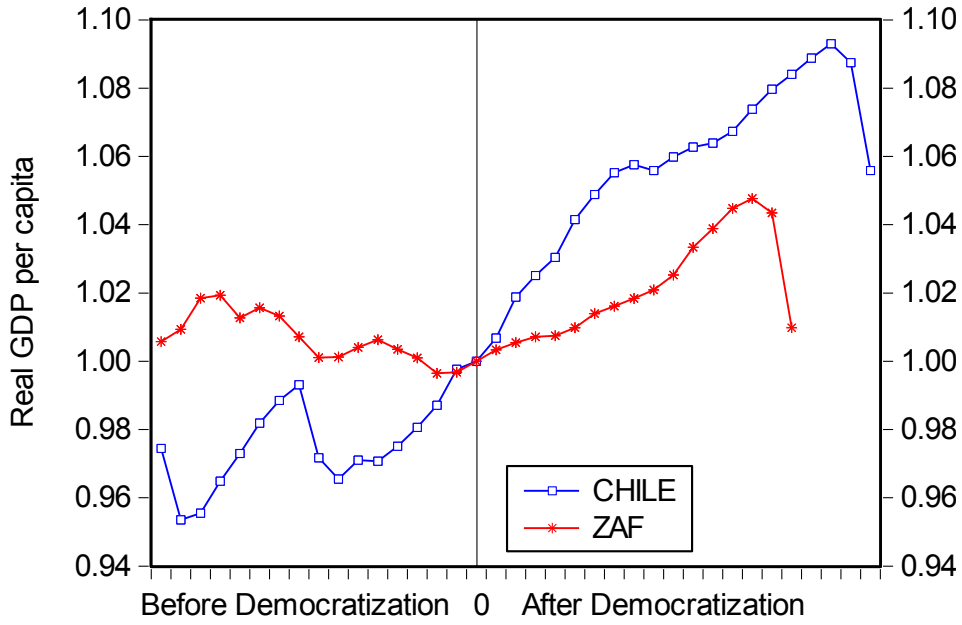
Note: Law and Order averaged 4.0 in Chile before democratization but 4.8 afterwards. It averaged 2.0 and 2.6, respectively, in South Africa (ZAF). For both countries, GDP per capita in the year of the democratization event has been normalized to equal one.

Figure 2: Natural Logarithm of GDP Per Capita, 1850-1913

Figure 3a: Law and Order across Regime Types

Figure 3b: Economic Growth across Regime Types
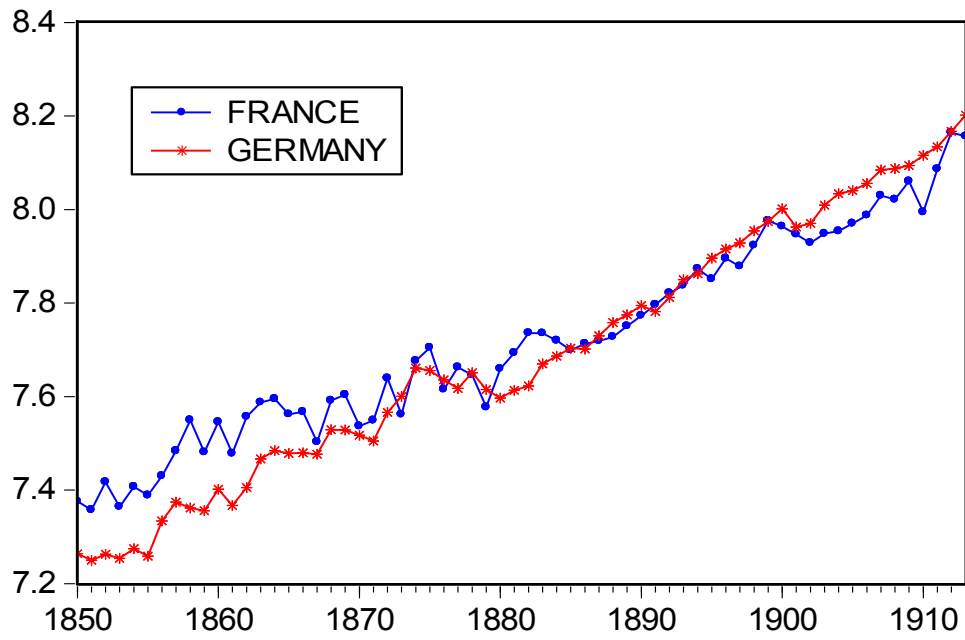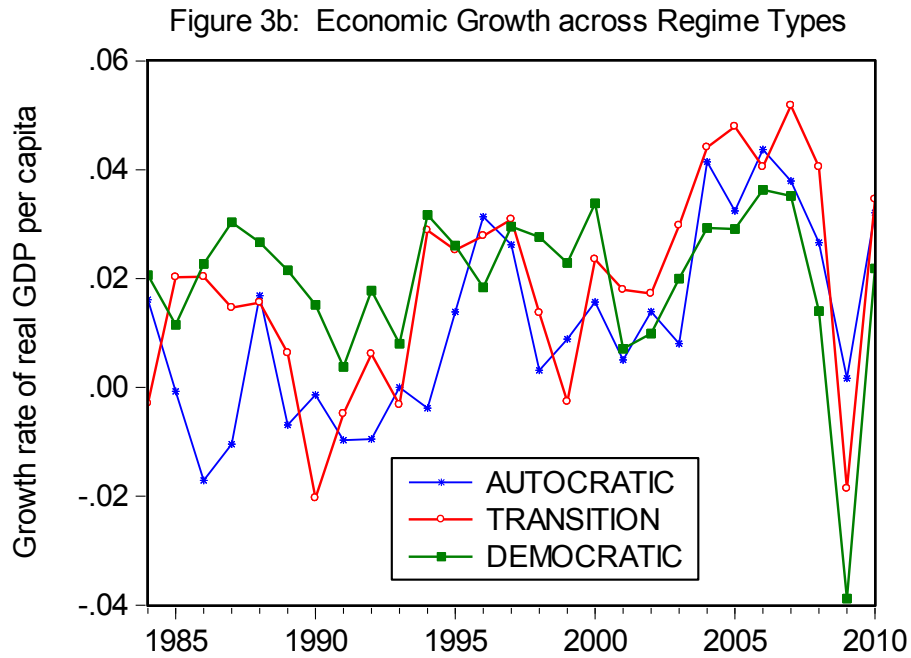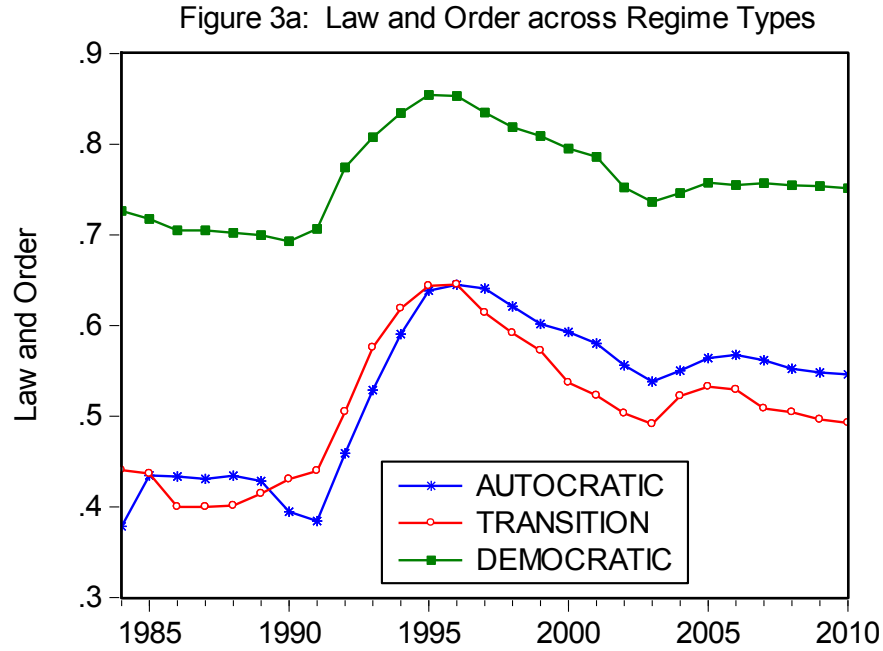
Note: In both figures, "autocratic" refers to the group of countries that remained nondemocratic between 1984 and 2010. "Democratic" countries are the ones that were always democratic during this sample period. "Transition" countries are those that fully democratized during the sample period.

Figure 4: Predicted Growth Rates for Autocracies and Democracies accross Different Values of Law and Order