

Democratic Institutions and Regulatory Reforms

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Abstract We use a sample of 144 countries over the period 2003-2013 to investigate the link between democratic institutions and regulatory reforms. Democracy may be conducive to reform, as politicians embrace growth-enhancing reforms to win elections. On the other hand, authoritarian regimes may not worry as much about public opinion and could undertake reforms that are painful in the short run but bring long-term benefits. We test these alternative hypotheses, using data on regulatory reforms from the World Bank's *Doing Business* database. The results provide mixed support for the hypothesis that democracy is good for regulatory reforms. We also show that regulatory reforms are more likely just after parliamentary elections in poor and middle-income countries.

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1. Introduction

The link between political and economic governance has been the subject of debate at least since Aristotle in 4th century BC. In *The Politics*, Aristotle thought that democracy functioned well in the absence of inequality, and so “a city ought to be composed, as far as possible, of equals and similars; and these are generally the middle classes.” Two millennia later, Montesquieu supported the view that checks on the powers of government are a pre-requisite for good economic governance and prosperity. More recently, Schumpeter (1942) argued that “modern democracy is a by-product of the capitalist process,” while other scholars further developed his theory by finding that the need for democratic institutions does not arise until countries reach a certain degree of economic development, through market reforms (Lipset, 1959).

A separate literature – on development – finds that democracy sometimes assists reformers in making difficult choices that potentially hurt important lobbying groups. Examples include Dewatripont and Roland (1992) and Roland and Verdier (2003), and Freund and Rijkers (this issue) in the context of labor markets. However, Du, Lu and Tao (this issue) find that the rigid regulatory state has played a positive role in the economic transition in China. And Freund and Jaud (2013) identify over 100 transitions to and from democracy, and show that the transition to democracy yields no growth dividend compared to other types of regime change and that countries that democratize slowly do not gain in economic growth from regime change. In contrast, Acemoglu et al (2014) find a positive effect of democracy on growth, using a similar sample.

Overall, the empirical evidence on the link between democracy and reforms is unclear. Economic history provides us with examples of both authoritarian and

democratic regimes that implemented major economic reforms. For example, successful economic liberalization was achieved under the military regimes in Argentina (1966 and 1976), Chile (1973), Brazil (1964), Uruguay (1976), and under authoritarian regimes in China (1978), Vietnam (1993), Saudi Arabia (2006) and Azerbaijan (2008). Reform is also achieved under democratic regimes in Australia (1983), Colombia (1986, 1991, 2006), New Zealand (1984), Spain (1977-1978), Poland (1992), Russia (1992), Estonia (1993), Slovakia (1998-2000), Georgia (2004-2008), FYR Macedonia (2007-2008) and Latvia (2009-2011).

The existing economics literature on the relationship between democracy and reform first developed around the experience of countries with macroeconomic stabilization efforts in the 1970s. It is largely based on case studies (see, for example, Williamson, 1994; Nelson, 1990; Bates and Krueger, 1993). While this literature does not reach a consensus on whether democracy promotes reform, it highlights the argument that reforms are often unpopular because they tend to reduce living standards in the short run. Even reforms that increase overall prosperity (measured in GDP growth) may be unpopular if compensation schemes for the losers are not credible; and if benefits are far in the future and costs more immediate (Fernandez and Rodrik, 1991; Rodrik, 1996).

These problems with democracy are compounded by the fact that democracies offer more channels of protest and influence on policymaking to subordinate groups than authoritarian regimes. And that they create more favorable conditions for the development of strong and independent sectoral and non-government organizations capable of resisting reform efforts (Remmer, 1986). Lastly, democratic rule may fragment decision-making authority among branches of government, allowing opponents

of reform to interfere more easily with program design. In contrast, authoritarian governments have less need to respond to either popular opinion or vested interests and hence can more readily base their decision on criteria of economic rationality. They are better able to make long-run plans than are democratic governments tied to electoral cycles; have greater centralization of power that facilitates the implementation of reforms.

However, these supposed advantages of authoritarianism are not without their problems. For example, to the extent that policy information and feedback are vital to the design of reforms, democracies may have an advantage (Remmer, 1986). Autocratic rulers do not have to worry about re-election and hence it is not clear what their incentive to reform is; losers from reforms may comply with their defeat because they believe that the institutional framework that organizes the democratic competition will permit them to advance their interest in the future (Przeworski, 1991).

The literature on democracy and reforms received a new life with the trade liberalization and agricultural liberalization reforms of the 1990s. These gave rich empirical data, including on the relationship between different types of democracies and structural reforms. Examples include Olper and Raimondi (2013) and Giuliano et al (2013). The findings generally support the view that democracies increase the likelihood of reform, while not finding support for a feedback mechanism.

The most recent line in the literature on economic reforms studies the post-communist experience. Examples include Grosjean and Senik (2011), BenYishay and Grosjean (this issue), and Dower and Markevich (this issue). These studies find some

evidence for the positive effect of democracy on attitudes towards structural reforms like privatization and competition policy.

Still, the empirical literature on democracy and reforms is in its infancy, mostly hobbled by the lack of available panel data that relates changes in political structure to changes in regulatory governance. All existing studies have hence focused on macro-economic or sectoral reforms. In this paper we provide analysis of the link between democratic institutions and regulatory reforms, using data on micro-economic reforms. In particular, we study the relationship between business regulatory reforms, shown in previous studies (for example, Klapper, Laeven and Rajan, 2006 and Barseghyan, 2008) to expand growth, and the level of parliamentary democracy as a proxy for democratic institutions. The analysis is done on a sample of 144 countries, with data on reforms between 2003 and 2013 drawn from the World Bank's *Doing Business* project.

Our data are less subject to the criticisms on other measures of economic institutions, which suffer from significant endogeneity issues, and measure outcomes rather than institutions (for example, Glaeser et al., 2004). The *Doing Business* data are focused on specific regulatory or legal reforms, and as such they are a better indicator of underlying institutions. At the same time, they are sufficiently finely measured so as to avoid the possibility of such reforms affecting the development of democratic institutions. In other words, the feedback loop from reforms to democratic development, that has worried researchers using macroeconomic reform data, is less of an issue here.

We experimented with a number of different specifications. While most of these specifications show a strong positive relationship between democracy and reforms, the relationship is somewhat weak in evidence is somewhat weak in some specifications. In

this sense, our results for the positive effect of democracy on reforms are mixed. For example, for our main specification, we find robust evidence for the link between democratic institutions and regulatory reforms. The estimates imply that a move from below-average to above-average level of parliamentary democracy increases the probability of reform by as much as 8.6 percentage points, a large effect given that the probability of doing reform by a country in a given year averages 68.3 percent in our sample. Higher-end estimates imply an increase of 20.4 percentage points in the probability of a reform in moving from below- to above-average level of democracy.

Using a continuous measure of democracy, we find that moving from the lowest to the highest value on the democracy scale increases the probability of reform by 8 to 21 percentage points. Finally, using an alternative measure of democracy, we find that democracy increases the likelihood of growth-enhancing reform by a high of 25.2 percentage points and a low of 7.2 percentage points. These results are robust to the inclusion of various proxies for the initial institutional environment, controlling for per capita income, and restricting the sample to developing countries.

We also test the hypothesis that democratic elections lead to regulatory reforms. Using data for elections to the lower camera of national parliaments, we show that regulatory reforms pick up speed in the aftermath of elections in middle-income and poor countries. The results are insignificant in high-income countries. The magnitudes for middle-income and poor countries are large. For example, the lowest marginal effect of an election on the probability of regulatory reform is an increase of 6.7 percentage points and the highest equals an increase of 8.8 percentage points.

The rest of the paper is organized as follows. Section 2 studies the previous literature on democracy and reforms. Section 3 describes the data and main variables. Section 4 shows the main regression results, Section 5 provides robustness checks. Section 6 concludes.

2. Empirical Evidence on Democratic Institutions and Reforms

The empirical evidence on the link between democratic institutions and economic reforms is surprisingly sparse. This is probably because casual observation suggests no discernible link. Take the examples of Chile under Augusto Pinochet, South Korea under Park Chung-hee, or Kazakhstan under Nursultan Nazarbayev. In all these, important economic reforms were undertaken under authoritarian regimes. East Asian economies developed mostly under authoritarian regimes during the East Asian Miracle decades. Also, significant economic crises in Latin America during the 1980s and nowadays illustrate how democracy can be an obstacle to the development of the market, when leaders avoid imposing unpopular reforms not to upset voters. Examples include Argentina under Cristina Kirchner, Ecuador under Rafael Correa, Venezuela under Nicolas Maduro.

In contrast, the most significant economic reforms in the past several decades have been undertaken with the advent of democracy in countries like the Czech Republic under Vaclav Klaus, Georgia under Mikhail Saakashvili, and Poland, under Leszek Balcerowicz. Examples outside post-communist countries include New Zealand under David Lange, Colombia under Alvaro Uribe, and Germany under Gerhard Schroeder.

Existing economic theory does not give a clear answer as to whether democratization enhances economic reforms. Democratic regimes could lead to more reforms if reforms create more winners than losers (Giavazzi and Tabellini, 2005). Democratically elected governments may also have greater legitimacy to implement and sustain policies bearing high short-term costs. Democracy could lead to economic reforms by limiting rent-seeking and putting in place a system of checks and balances, which prevents powerful lobbying groups from hijacking the reform process.

Several empirical studies lend some support to these theoretical models. Persson (2005) shows that the forms of democracy (parliamentary, proportional and permanent ones) are important in explaining trade reforms. Further, Persson and Tabellini (2006) show that while a shift from autocracy to democracy does not have an effect on either fiscal or trade policy, there is a positive and large effect when one considers transition to parliamentary (vs. presidential) or proportional (vs. majoritarian) democracies.

Olper and Raimondi (2013) study the effect of electoral rules and forms of government on public policy outcomes using a panel dataset on agricultural reforms in 74 countries over the 1960-2005 period. They find evidence that the specific nature of democratic institutions has important consequences for public policy. Proportional democracies and presidential democracies – compared to majoritarian and parliamentary democracies – give more public support to agricultural reforms. Grosjean and Senik (2011) use attitudinal data in 28 post-transition countries to find a significant effect of democracy, as measured by the Freedom House democracy score, on market liberalization. Using household surveys conducted in 2006, the authors find a positive

and significant effect of democracy on peoples' support for a market economy, but no effect of market liberalization on support for democracy.

The most comprehensive study to-date is Giuliano et al (2013), who investigate the effect of democracy on the adoption of economic reforms using a dataset on reforms in the financial, capital and banking sectors, product markets, agriculture, and trade for 150 countries over the period 1960–2004. Democracy has a positive and significant impact on the adoption of economic reforms, but there is little evidence that economic reforms foster democracy. The variables used in Giuliano et al (2013) range widely in terms of reform directions. These include, for example, the extent of the external capital account liberalization. This index contains information on a broad set of restrictions including, controls on external borrowing between residents and non-residents, as well as approval requirements for foreign direct investment. The product market indicator covers the degree of liberalization in the telecommunication and electricity markets, including the extent of competition in the provision of these services, the presence of an independent regulatory authority, and privatization. The agricultural sector indicator captures intervention in the market for the main agricultural export commodity in each country. It measures the extent of public intervention in the market going from total monopoly or monopsony in production, transportation or marketing (i.e., the presence of marketing boards), the presence of administered prices, public ownership of relevant producers or concession requirement to free market. Trade reforms are captured by using two different indicators: one based on tariffs and the other measuring the extent of current account liberalization. The indicator based on tariff liberalization is meant to capture distortions in international trade and is measured by average tariffs.

These studies provide supporting evidence on the link between democracy and macro-economic or structural reforms. But as such reforms are frequently needed when the economic situation in a country has deteriorated significantly, they may be highly correlated with political change. Such change may not be as dramatic as a shift from authoritarian to a democratic regime, as took place in Eastern Europe after the collapse of central planning. Nevertheless, the possibility that the current studies pick up relations that are co-determined in nature (a bad economic situation necessitates both a political change and a radical reform program) suggests that an extension of the empirical literature could look at business regulatory reforms, which are less likely to be part of a comprehensive reform package to pull an economy out of a crisis. The current study is a small step in this direction.

3. Description of data

The sample consists of 144 countries for which information on our main variables is available. The time period covered by the study is 2003-2013. In the analysis we utilize several sources of data including the World Bank's Doing Business project and World Development Indicators, Inter-Parliamentary Union (IPU), Polity IV, Freedom House, Djankov et al. (2007), and La Porta et al. (1999). The definition of all variables and their sources is provided in Table 1. Summary statistics and correlations between the explanatory variables used are provided in Table 2 and 3, respectively.

3.1 Dependent variable

The dependent variable is based on data collected by the World Bank's Doing Business project. As part of its annual exercise, Doing Business compiles ten sets of indicators covering various aspects of the business climate including starting a business, paying taxes, obtaining licenses, getting credit, protecting investors, employing workers, trading across borders, registering property, closing a business and enforcing private contracts. Information is also available on an annual basis on important reforms on each of these indicators. This information is coded as a dummy variable, which equals 1 if a country has implemented a positive reform during the year on a given indicator and 0 otherwise. A positive reform, as defined in Doing Business, is one that makes it faster, cheaper or administratively easier for local businesses to start and run operations; or a reform that increases the protection of property rights. An example is reducing the number of days to get an industry license, eliminating the minimum capital requirement for start-ups, or increasing the legal rights of creditors and minority shareholders.

Using this dataset, we define the main dependent variable, *Reform*, as a dummy variable equal to 1 if a positive reform occurred in one or more of the ten indicators in a given year and 0 otherwise. The mean value of the variable equals 0.68 implying that in a given year 68 percent of the countries implemented one or more reforms (Table 2). For robustness, we also report all results using an alternative measure that equals (log of 1 plus) the number of indicators on which a positive reform occurred during a given year (*Number of Reforms*). For example, in 2005, Turkey implemented reforms in paying taxes and trading across borders, implying a score of (log of 1 plus) 2 for the dependent variable. The two dependent variables are highly correlated (the correlation is 0.854).

Data on changes in the regulatory environment are also available from alternative sources such as the Heritage Foundation’s Freedom of the World Index or the Fraser Institute’s Economic Freedom of the World. One could use annual changes in these data to construct a measure of reform similar to the ones described above. However, the Doing Business data offer two advantages. First, unlike other data sources that are based on experts’ perceptions, the Doing Business data are based on actual reforms. This allows us to interpret the findings in terms of specific reforms that are more (or less) likely under a democratic vs. non-democratic environment or during the period following an election than at other time. Second, and more important, since the Doing Business data cover a specific set of regulatory reforms, reverse causality from the dependent variable to our explanatory variables including democracy and elections is less likely. It is difficult, for example, to imagine that the enactment of a more efficient bankruptcy law would influence the societal bend towards democracy or the outcome of parliamentary elections. In contrast, other available indicators of the regulatory environment are aggregate or macro level measures. A possible feedback effect from macro level changes in the regulatory environment to the quality of democracy or the probability of having an election is plausible. This problem is identified in Glaeser et al. (2004), among others.

3.2 Explanatory variables

Democracy

The main explanatory variable is a measure of the level of democracy. We use data from Polity IV and Freedom House to construct three separate measures of democracy. The “democracy” variable in the Polity IV data provides a score between 0 and 10 for each

country with higher scores implying a better quality of democracy. In our sample, countries with the highest level of democracy include Costa Rica, Mauritius, Mongolia, the Netherlands and United States, while Azerbaijan, Belarus, Bhutan, Vietnam and Sudan show the lowest level of democracy.

The democracy scores from Polity IV are available on an annual basis but there is little time variation in these scores over our sample period. Another issue here is that the Polity IV data are defined as of the end of calendar year (December 31st) while the Doing Business reforms data do not follow the calendar year and they also do not report on the month of the reform. Given this problem, we follow two approaches. First, in our main approach we use scores from Polity IV data in year 2003, the beginning of the sample period, to construct *Democracy*, our main measure of democracy. It equals 1 for a country with a score of 5 or higher (high or above-average democracy) and 0 otherwise (low or below-average democracy). For robustness, we report all results using the democracy scores on the full 0-10 scale (*Democracy 2*). The mean value of *Democracy* equals 0.62 and the same for *Democracy 2* equals 5.62 with a standard deviation of 3.85. Second, we revisit all our results using annual values of the *Democracy* and *Democracy 2* variables.

The third measure of democracy we use is based on data from Freedom House. It equals the average of the Political Rights index and the Civil Liberty index for the year 2003 (*Democracy 3*). The mean value of *Democracy 3* equals 3.37 and the standard deviation is 1.89. According to *Democracy 3*, Australia, Chile, Mauritius, Norway, and United States are most democratic in our sample, while the least democratic countries are

China, Eritrea, Sudan, Vietnam and Uzbekistan. The three democracy measures defined above are highly correlated with each other (Table 3).¹

These two sources of democracy data have been used in the previous studies on democracy and institutional development, for example Barro (1997), La Porta et al (1999), Rodrik (1999), Glaeser et al (2004), Gennaioli et al (2013) and Chong et al (forthcoming).²

Elections

The second explanatory variable that we focus on is related to the election cycle. It is a dummy variable equal to 1 if the country had an election to the lower house of the parliament in the 12 month period prior to (the beginning of) the period covered by DB reforms and 0 otherwise (*Elections*). The data source for this variable is the Inter-Parliamentary Union (IPU) and various website searches for the few countries that are not covered by IPU. We note that the election variable varies both across countries and over time. It covers only direct elections. “Indirect elections” which amount to nominating members to the lower house by either the head of state or a handful of individuals in power does not count as an election. Some of the countries in our sample with indirect elections include China, Eritrea and Oman. The mean value of *Elections*

¹ We note that all the regression discussed in the paper use standard errors that are clustered on the country. So, the t-statistics are not blown up due to lack of over time variation in our democracy (and other explanatory) variables. We also check that all our main results for democracy continue to hold if we collapse the entire data at the country level and run cross-country (OLS) regressions. We prefer the panel specification because of the election variable (that varies over time) and in order to use the logit specification that is more appropriate for analyzing the occurrence of the reform event (our reform dummy variable).

² Another measure commonly used in the literature in the “Polity” measure from the Polity IV database. This variable is the difference between the “Democ” and “Autoc” variables in Polity IV data. However, as Marshall et al. (2013) note, there is no theoretical justification for the Polity variable and they recommend using the Democ or Autoc measures separately (pages 16-17). Even so, the democracy variable used above and the Polity variable (year 2003 values) are highly correlated (correlation of 0.96) and all our main results discussed in the paper hold if we use the Polity variable as the measure of democracy.

equals 0.23 implying that on average about 23 percent of the countries in our sample had elections in any given year. We also experimented by lagging the election variable by one more year – that is, we looked at the relationship between the probability of reform and an election taking place between one and two years prior to the beginning of the reform period. However, this lagged election variable did not yield any significant results implying that the honeymoon period for reforms following an election lasts at most one year.

It is natural to expect some correlation between the democracy and election variables defined above. In our sample, this correlation is 0.39 (Table 3).

Other determinants of reform

The proclivity to reform is likely to depend on the quality of the broader economic institutions that may determine how governments behave. Similarly, aspects of the broader economic institutions may also be correlated with the quality of democracy and in some cases, the election cycle. Hence, we check for the robustness of our main results (how the proclivity to reform is correlated with our democracy and election variables) by controlling for a number of alternative proxy measures of broader economic institutions suggested in the previous literature.

We begin by controlling for differences in income levels across countries using (log of) GDP per capita in 2003 taken from Penn World Tables. The quality of democracy is typically better in higher income countries (Table 3). We may also expect higher income countries to reform more because these countries have greater capacity for

reform, and more checks and balances on the government that prevent the use of business regulations by politicians for generating rents.

Second, another strand of the literature highlights a strong relationship between the quality of institutions and geography related factors (Gallup et. al., 1998). Following this body of work, we use two sets of controls for geography. The first is the absolute distance of a country from the equator divided by 90 (*Latitude*). The second is region fixed effects where regions include East Asia and Pacific, Latin America and Caribbean (LAC), Middle East and North Africa (MENA), North America, South Asia, Sub Saharan Africa (SSA) and the omitted category of Europe and Central Asia (ECA). Classification of countries into these regions is taken from the World Development Indicators of the World Bank.

Third, regulatory reforms are unlikely to be of much use and hence unlikely to be implemented if the broader institutional environment does not provide adequate security and protection of private investment. We control for this factor using the Rule of Law measure taken from World Bank's Governance indicators (year 2003 values). The measure broadly captures the respect for private property, the incidence of crime and the enforceability of private and government contracts.

Fourth, there is now substantial evidence showing that the legal tradition of a country is a strong proxy for various aspects of the institutional environment. For example, Djankov et al (2002) show that entry barriers are much lower in English common law relative to the French civil law countries. Similar findings are reported for shareholder rights, contract enforcement (Djankov et al., 2003) and the flexibility of labor markets (Botero et al., 2004). We control for the legal tradition of a country using dummy

indicators for the legal tradition of a country. These traditions include French, German, Scandinavian, Socialist and the omitted category of English common law. The data source for the variable is Djankov et al., (2007).

Fifth, starting with the seminal work of Max Weber, a number of studies have highlighted the importance of religion in shaping the quality of institutions. For example, Stulz and Williamson (2003) show that the low level of creditors' protection present in Catholic countries is most likely due to the anti-usury culture pervasive in the Catholic tradition. Following this literature, we use dummy indicators identifying the main religious group in the country as either Muslim, or Catholic, Protestant and the residual category of all other religions. The data source for these indicators is La Porta et al. (1999).

Consistent with the literature discussed above, we find a strong link between some of the control variables discussed above and reform. Nevertheless, the qualitative nature of the relationship between democracy, election and reforms is not much affected by these controls.

4. Main empirical results

The main empirical results are provided in Table 4 and 5. The dependent variable in these tables is the reform dummy (*Reform*) and the main explanatory variables are *Democracy* (year 2003 values) and *Elections*. The coefficient values shown in the two tables are the estimated marginal effects from logit specification. Results in Table 4 are for the full sample of countries. These results show that without any other controls, a move from below-average to above-average level of democracy is associated with an increase in the

probability of reform by 11.7 percentage points (column 1). The increase is statistically significant at the 1 percent level. It is economically large, given that the probability of reform in a given country and year averages 68.3 percent in our sample.

Regression results for the relationship between the reform dummy and the election variable without any other controls are provided in column 2. We find a positive relationship between the two, but this is statistically insignificant. In terms of the magnitude, having an election in the previous year is associated with an increase in the probability of reform by 3.8 percentage points.

In column 3 we add the democracy and the election variable simultaneously to the specification. The results do not change materially. The estimated marginal effect of democracy on reform dummy declines only slightly from 11.7 percentage points above (column 1) to 11.5 percentage points (column 3) and is significant at the 1 percent level. For the election variable, its marginal effect on the reform dummy is statistically insignificant.

The estimated marginal effect of the democracy variable remains positive, large and statistically significant at the 1 percent level when we add the various controls discussed in the previous section (columns 3-9). The marginal effect is lowest when we control for *Latitude*, equaling 8.6 percentage points (column 5) and it is highest when we control for the main religious group dummies, equaling 20.4 percentage points (column 8). Compared with the case when we control for only the election variable (column 3), the estimated marginal effect of democracy on reform dummy is lower due to the controls for income level, latitude, region fixed effects and legal origin of countries (columns 4, 5,

7 and 9); and it is higher due to the controls for rule of law and the main religious group dummy (columns 6 and 8).

The results in Table 4 for the election variable are also qualitatively unchanged by including various controls. That is, irrespective of the controls, the estimated marginal effect of election on the reform dummy is positive but statistically insignificant.

Among other factors, we find that, controlling for the level of democracy and the presence of elections, reform is significantly more likely in countries that are more distant from the equator (significant at less than the 1 percent level) and those in the Middle East and North Africa region (significant at close to the 5 percent level) and in Europe and Central Asia (significant at the 1 percent level) relative to the rest of world. The chances of reform are significantly lower (significant at less than the 5 percent level) for countries that follow the English legal origin relative to countries with the French, German or Socialist legal origin. The likelihood of reform is also significantly lower (at the 5 percent level) among countries with the Scandinavian legal origin relative to the German and Socialist legal origin. Across religious groups, the chances for reform are significantly lower (at the 5 percent level) for countries where the majority are either Catholic or Protestant relative to the rest (Muslim and All other religions).³

In sum, democracy is associated with regulatory reforms, and this association remains strong when we control for various measures of institutional quality or cultural

³ One concern could be that democracies may manage relatively minor reforms that are spread out over more years. We check for this possibility by using two alternative measures of reforms. First, starting with the *Reform* variable, we set its value equal to 0 in any given year if the variable takes a value of 1 in the previous year. That is, we eliminate all consecutive-year reforms. Second, we follow a similar procedure of eliminating consecutive year reforms for the 10 Doing Business indicators and construct a reform measure similar to *Reform*. The strong democracy-reforms relationship survives both these tests.

and religious heritage.⁴ However, there is no significant relationship between elections and the probability of reform.

Regression results for the specifications discussed above but with the high income countries excluded from the sample are provided in Table 5. These results are qualitatively similar to the ones discussed above for the full sample except that the positive relationship between democracy and reforms found above is somewhat weak (significant at only the 10 percent level) in one of the specifications and that the election variable is now significant. That is, the marginal effect of the election variable is now larger, positive and statistically significant in all specifications (at the 5 percent level). For example, the lowest marginal effect of an election on the probability of reform is an increase of 6.7 percentage points (column 7) and the highest equals an increase of 8.8 percentage points (column 2). Hence, the weak results we found above for the election-reform relationship seem to be driven by high-income countries. One reason for this could be that the high income countries may have other institutions and public pressure on the government to reform which render the event of having an election irrelevant for the proclivity to reform.

We replicate all the results in Tables 4 and 5 using the annual measure of the democracy dummy. The estimated marginal effect of democracy on the probability of reform is smaller using the annual values of democracy but this difference is mainly due to the smaller sample size for the annual democracy values (due to missing data for some years). Focusing on the specifications in Table 4, the marginal effect of the annual democracy variable is economically large and statistically significant in all specifications.

⁴ Our results for the democracy-reforms relationship do not change much if we control for all the variables in Table 4 simultaneously. In this case, the estimated coefficient of *Democracy* equals 1.022, significant at the 1% level (p-value of 0.001).

For example, without any other controls, the estimated coefficient value of the annual democracy variable equals 10.2 percentage points (significant at 1 percent level) compared with a somewhat higher figure of 11.7 percentage points for the initial year value of democracy (column 1, Table 4). For the specifications in Table 4, the marginal effect of the annual democracy variable ranges between 7.3 percentage points (when we control for election and latitude variables) and 15.3 percentage points (when we control for election and the religion variables). For comparison, the range for the marginal effect of democracy on reforms using the initial year (2003) values of the democracy variable is 8.6 (when we control for election and latitude variables) and 20.4 percentage points (when we control for election and the religion variables). Results for the election variables are qualitatively similar with initial year and annual values of the democracy dummy. All results using annual variables for democracy are available in an appendix available online at the corresponding author's website.

Excluding high income countries from the sample as in Table 5, we again find no qualitative difference in the results whether we use initial year or annual values of the democracy variable. Regression results show that the estimated marginal effect on reforms of democracy dummy based on its annual values is positive, economically large and statistically significant in all the specifications except when we control for election variable and income level (specification in column 4 of Table 5). The loss in significance level here compared with when we use the initial year values of democracy is due to the difference in sample size (due to missing data for some years for the annual democracy series). The marginal effect of democracy dummy ranges between 6.4 percent to 13.1 percentage points when we use the annual values of democracy variable and it ranges

between 8.2 to 19.6 percentage points when we use the initial year values of democracy variable. In sum, the results for the election variable are qualitatively similar whether we use initial values of democracy or the annual values.

5. Robustness

Using the full democracy scale

We repeat the regression exercise using the full (0-10) democracy scale. The relationship between democracy and reform holds in most of the specifications but there are a couple of exceptions where the relationship is weak and statistically insignificant (Table 6). The exceptions are when we control for latitude and the regional fixed effects (columns 5 and 7). Controlling for latitude or the regional fixed effects causes the estimated marginal effect of the democracy variable on the probability of reform to decrease sharply in magnitude and become statistically insignificant. In all the other specifications, the estimated marginal effect of democracy on reform is large and statistically significant. In terms of the magnitude, moving from the lowest to the highest democracy score in our sample (0 to 10), is associated with an increase in the probability of reform by 21 percentage points at the high end (column 8) and by 8 percentage points at the low end (columns 5, 7). Results for the election variable are qualitatively similar to what we found above for the full sample using the democracy dummy variable. That is, election and reform show a positive correlation but this relationship is weak and statistically insignificant.

We also experimented interacting the time-invariant measure of democracy with the election variable. The interaction term is insignificant in the various specifications,

suggesting that democracy does not seem to matter more around election time than during non-election years.

As we found in the previous section, excluding the high-income countries from the sample causes the positive relationship between election and reform to become stronger (more positive) in magnitude and also statistically significant at the 1 percent or 5 percent level for all the specifications in Table 5 (results not shown). In terms of the magnitude, the probability of reform increases by 6.7 to 8.8 percentage points following an election. There is not much change from above in the results for the full scale democracy variable except that it is now significant at the 5 percent level when in addition to the election variable we control for latitude and regional fixed effects. However, it is insignificant at the 10 percent level when we control for GDP per capita and the rule of law variable.

The results for the democracy variable on the full scale do not differ qualitatively from above when we use the annual values of the democracy (full scale) variable. The estimated marginal effect of the annual democracy variable on the probability of reforms is positive and statistically significant except when we control for latitude or the regional fixed effects along with the elections variable. This is also what we found above in Table 6 using the initial year values of the democracy variable. In terms of the magnitude, the marginal effect of democracy on the probability of reform ranges between 0.7 percentage points to 1.7 percentage points when use the annual values of the democracy variable compared with 0.8 to 2.1 percentage points when we use the initial year values of the democracy variable (Table 6). Excluding the high income countries from the sample, results using the annual values show that the estimated marginal effect of democracy is

now significant at the 5 percent level when in addition to the election variable we control for latitude and regional fixed effects. This is what we found above using the initial year values of democracy. However, the marginal effect based on annual values of democracy variable is insignificant when we control for GDP per capita and the rule of law variable (along with elections variable). The range of the marginal effect of democracy here is 0.8 to 1.8 percentage points when we use the annual values of the variable and 0.8 to 2.3 percentage points when we use the initial values. There is no noticeable change in the results for the elections variable here when we replace initial year values of the democracy variable with its annual values.

Total number of reforms

Next, we report regression results using the OLS estimation method for the (log of 1 plus) total number of reforms as the dependent variable (Table 7). These results are qualitatively similar to what we found above for the full sample using the reform dummy variable. That is, with a couple of exceptions, the total number of reforms is positively and significantly correlated with the democracy dummy variable (at the 5 percent level) in the various specifications implying more reforms in countries with above-average than below-average democracy. The two exceptions are when along with the elections variable we control for latitude and regional fixed effects (democracy-reforms relationship is significant only at the 10 percent level here; columns 5 and 7). For example, without any controls, moving from below-average to above-average democracy score is associated with an increase in the total number of reforms by .136 log points, significant at the 1 percent level (column 1). This is a large increase given that the mean value of the

dependent variable equals only 0.70 in our sample. Adding the various controls does lead to some change in the estimated coefficient value of the democracy variable which ranges between 0.09 (column 7, significant at the 10 percent level) when we control for the regional fixed effects and 0.242 (column 8, significant at less than the 1 percent level) when we control for the main religious group in the country.

The results for the election variable are also qualitatively similar to what we found above using the reform dummy variables (as in Table 4). The number of reforms and the election variable show a positive relationship but this relationship is weak and statistically insignificant. This holds irrespective of the set of controls in place.

We check for the results when excluding the high-income countries from the sample (results not shown). The estimated coefficient value of the election variable increases in magnitude ranging between 0.044 and 0.081 (when high income countries are excluded) compared with ranging between 0.013 and 0.036 earlier (in the full sample). Nevertheless, the coefficient value of the election variable is statistically significant at the 10 percent level in 3 out of the 8 specifications (as in Table 7, columns 2-9) and insignificant otherwise. Results for the democracy and reforms relationship do not change qualitatively from above (as in Table 7) with the exception that controlling for income level along with the elections variable now causes the democracy and reforms relationship to become insignificant (at the 10 percent level). Again, we also tried adding an interaction term between the time-invariant democracy variable and the election variable, but found it insignificant.

Regression results using the annual values of the democracy variable are roughly qualitatively similar to the ones discussed above for the initial year values of the

democracy variable. This holds in the full sample and also in the restricted sample that excludes the high income countries. Nevertheless, some differences are to be noted. First, in the full sample the estimated coefficient value of democracy variable based on initial year values is significant (at the 10 percent level) when in addition to the election variable we also control for latitude (column 5, Table 7) and region fixed effects (column 7, Table 7). However, for both these specifications, results based on annual values of democracy variable show an insignificant relationship (at 10 percent level) between democracy and reforms and this is largely so due to missing data for democracy for some of the years and countries. Second and continuing with the full sample, the estimated coefficient values of the democracy variable are somewhat smaller in magnitude when we use the annual values, a result that is in part due to missing data for some years and countries for the democracy variable. For example, the estimated coefficient value of the democracy ranges between 9 and 24 percentage points for the various specifications in Table 7 when we use the initial year values of democracy and between 7.7 and 18.2 percentage points when we use the annual values of democracy. Third, as for the full sample, results excluding the high income countries from the sample are qualitatively similar except for some minor differences (discussed below) whether we use the initial year or annual values of the democracy dummy. For example, the estimated coefficient value of democracy is insignificant at the 10 percent level when we control for income level along with the election variable and this holds for both the initial year and annual values of the democracy variable.

For the remaining specifications as shown in Table 7, the only difference is that the estimated coefficient value of democracy when we control for Rule of Law along

with the election variable is significant only at the 10 percent level when we use annual values of democracy compared with 5 percent significance level obtained when we use the initial year values of democracy. Fourth, the estimated coefficient value of democracy variable is quantitatively somewhat smaller when we use the annual values compared with the initial year values of democracy. For example, the estimated coefficient value ranges between 7.7 and 17 percentage points when we use the annual values of democracy vs. 9.3 to 24.5 when we use initial year values of democracy.

The Gastil index of democracy

Next, we use the third measure of democracy from Freedom House (Table 8). Results using this measure of democracy are qualitatively similar to the ones discussed above for the full democracy scale measure. The democracy-reform relationship is economically large and statistically significant at the 5 percent or the 1 percent level in 5 out of 8 specifications (columns 1, 3, 6, 8 and 9), significant at the 10 percent level in 1 specification (column 4) and insignificant in the remaining 2 specifications (columns 5 and 7). Insignificant coefficient estimates are obtained in the specifications that include latitude and the regional fixed effects. In terms of the magnitude, the estimates in the table imply that moving from the lowest to the highest value of *Democracy 3* is associated with an increase in the probability of reform by 13.8 percentage points with no additional controls (column 1), a high of 25.2 percentage points with the religion fixed effects (column 8) and a low of 7.2 percentage points when we control for region fixed effects or the latitude of the country (column 5, 7).

Similarly, as above, the election variable continues to show a statistically insignificant relationship with the reform dummy and this holds irrespective of the set of controls in place.

As we found above, excluding the high-income countries from the sample (results not shown) causes the positive relationship between the election variable and the reform dummy to become stronger and statistically significant at the 5 percent and 1 percent level in all the specifications shown in Table 8. To get a sense of the magnitude, having an election in the last year is associated with an increase in the probability of a reform by a high of 8.8 percentage points (with no other controls in place) and a low of 6.5 percentage points (when we control for the regional fixed effects). These are economically large effects. For our democracy variable, it is positively correlated with the reform dummy but significant at the 5 percent and 1 percent level in 6 out of the 8 specifications shown in Table 8 and insignificant in the remaining 2 specifications (when we control for the rule of law variable and the income variable).

Regarding the magnitude involved, moving from the lowest to the highest value of *Democracy 3* is associated with an increase in the probability of reform by 13.8 percentage points with no other controls in place, a low of 11.4 percentage points (when we control for income level) and a high of 30.6 percentage points (when we control for the main religious group dummies).

Other robustness checks

Finally, for our main results in Tables 4 and 5 on the impact of democracy and elections on reforms, we performed a number of additional robustness checks. These checks were

performed using the initial year values as well as annual values of the democracy dummy variable. First, we controlled for GDP per capita in all the specifications but this did not change the results much from above. Second, we included all the controls discussed above simultaneously in the specification but this did not change the results much. For example, in the full sample and with all the controls added simultaneously, the marginal effect of *Democracy* on the probability of reform in a given year equals a large increase of 17.9 percentage points, significant at the 1 percent level. The corresponding increase when we use annual values of the democracy variable is somewhat smaller at 15 percentage points but still economically large and statistically significant at the 1 percent level. With the high income countries excluded (as in Table 5), the marginal effect of *Democracy* on *Reforms* equals an increase of 12.8 percentage points (significant at the 1 percent level) and that of *Elections* equals a large increase of 6.5 percentage points (significant at the 5 percent level). Using annual values of the democracy variable, the estimated marginal effect of democracy here equals 10.6 percentage points (significant at close to 1 percent level) and that of elections equals 6.6 percentage points (significant at the 5 percent level). Next, in separate regression (as in Tables 4 and 5) we performed the following additional checks: following Rodrik (1999) we controlled for the primary gross enrollment rates (using the World Development Indicators of the World Bank); controlled for the initial (year 2003) level of regulation using the Heritage Foundation's Business Freedom index and values of the Ease of Doing Business index⁵; controlled for the level of ethnic, linguistic and religious fractionalization using data from Alesina et al. (2003); controlled for foreign aid as percentage of GDP taken from the World

⁵ The Ease of Doing Business index is available from 2003 onwards, the starting year for the data on reforms. Hence, to avoid the simultaneity problem, we exclude year 2003 from the regressions that use the Ease of Doing Business index as a control.

Development Indicators of the World Bank, and controlled for the (log of) settler mortality rate from Acemoglu et al. (2001).⁶ The results survive these checks whether we use initial year values of democracy dummy or the annual values except when we control for the settler mortality rate, a result perhaps due to the smaller sample size (we lose 87 countries, which have no data on settler mortality). Further, excluding settler mortality rates, simultaneously controlling for all the other variables in Tables 4 and 5 and the ones discussed in this section did not change our main results much when we use the initial values of the democracy variable but they do become weak when we use the annual values and exclude high income countries from the sample. For example, in the full sample and with all these controls included in the specification, the marginal effect of *Democracy on Reform* equaled an increase of 15.6 percentage points, significant at the 1 percent level. The corresponding increase when we use annual values of the democracy dummy is lower at 9.6 percentage points but still economically large and statistically significant at close to the 5 percent level. Excluding the high-income countries (as in Table 5), the marginal effect of *Democracy* remains large, positive (equaling 12.8 percentage points increase) and significant at the 1 percent level; as above (Table 5), the marginal effect of *Election on Reform* equals a 6.4 percentage points increase and is significant at close to the 5 percent level. However, using annual values of the democracy dummy, the estimated marginal effect of democracy is insignificant (at the 10 percent

⁶ Foreign aid is defined as net official development assistance (ODA) which consists of disbursements of loans made on concessional terms (net of repayments of principal) and grants by official agencies of the members of the Development Assistance Committee (DAC), by multilateral institutions, and by non-DAC countries to promote economic development and welfare in countries and territories in the DAC list of ODA recipients. We use values of foreign aid averaged over the three year period prior to the reform years (2000-2002). Our results do not change if we use annual values of foreign aid during the reform period.

level); the marginal effect of elections variable on reforms continues to be high equaling 5.9 percentage points and significant.

Last, we also experimented with an interaction term between our democracy variables and the election variable under the assumption that the strength of the democracy-reforms relationship may depend on the occurrence of elections. However, we find no evidence in favor of this assumption in any of the specifications shown in Table 4 to Table 8.

6. Conclusion

The last quarter century has witnessed rapid growth in Africa, Asia, Latin America and the former communist economies in Eastern Europe. With democracy also expanding significantly in these regions, the link between the level of democracy and growth-enhancing reforms has received renewed interest.

This study expands the previous literature based on the democracy-reforms nexus by using new and carefully-constructed regulatory reform data. While there are important exceptions, overall the findings support the earlier results that an expansion of democratic rights encourages regulatory reforms and is sometimes likely to increase government efficiency and economic growth. This result is, however, not robust to using parliamentary elections as the proxy for democratic institutions. Overall, the evidence suggests that the large variety of democratic institutions may obfuscate the link between democracy and growth-enhancing reforms. While this study provides more granular data on regulatory reforms, it uses the standard variables for democratic institutions. Further

efforts may be focused on constructing more granular proxies for democratic institutions as well, so the link between the two can be established with more precision.

Another field of work, presented in this issue, is to focus research on regions where democratic institutions and regulatory reforms have only recently become present. One such region comprises the post-communist economies. Such research is helped by the historical fact that these countries were parts of the Austro-Hungarian, Ottoman, and Russian empires in the 18th and 19th centuries, thus providing the researcher with a rich set of instrumental variables for democratic institutions. Some recent work is already done exploiting this feature of the region, for example in Dower and Markevich (this issue), BenYishay and Grosjean (this issue), and Kuzmina, Volchkova and Zueva (this issue). This is clearly a promising venue to follow.

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Table 1: Description of variables

Variable	Description
<i>Reform</i>	Dummy equal to 1 if a country implemented one or more reform during the year and 0 otherwise. Source: Doing Business, www.doingbusiness.org .
<i>Number of reforms</i>	Log of 1 plus the total number of reforms for a given country-year. Source: Doing Business.
<i>Democracy</i>	Dummy equal to 1 if a country has a democracy score of 5 or higher in 2003 and 0 otherwise. Source: Polity IV.
<i>Democracy 2</i>	Democracy score in 2003. Source: Polity IV.
<i>Democracy 3</i>	Average of the Political rights and Civil Liberty index for the year 2003 from Freedom House. Source: Freedom House.
<i>Election</i>	Dummy variable equal to 1 if an election took place 12 months prior to the start of the Doing Business reforms period for the Lower House of the country and 0 otherwise. Source: Inter Parliamentary Union (IPU) and website searches.
GDP per capita	Log of GDP per capita in 2003. Source: Penn World Tables.
<i>Latitude</i>	Absolute distance of a country from the equator divided by 90. Source: La Porta et. al. (1999).
Rule of Law	Values of Rule of Law index in 2003. Source: World Bank. www.worldbank.org/wbi/governance/data
<i>Regions</i>	
Europe and Central Asia (ECA)	Dummy indicating a country in Europe or Central Asia region. Source: WDI, World Bank.
East Asia and Pacific	Dummy indicating a country in East Asia or Pacific region. Source: WDI, World Bank.
Latin America and Caribbean (LAC)	Dummy indicating a country in Latin America or Caribbean region. Source: WDI, World Bank.
Middle East and North Africa (MENA)	Dummy indicating a country in Middle East or North Africa region. Source: WDI, World Bank.
North America	Dummy indicating a country in North America region. Source: WDI, World Bank.
South Asia	Dummy indicating a country in South Asia region. Source: WDI, World Bank.
Sub-Saharan Africa (SSA)	Dummy indicating a country in Sub-Saharan Africa region. Source: WDI, World Bank.
<i>Legal origin, religions</i>	
English legal origin	Dummy indicating a country's legal system based on the English common law. Source: Djankov et. al. (2007).
French legal origin	Dummy indicating a country's legal system based on the French civil law. Source: Djankov et. al. (2007).
German legal origin	Dummy indicating a country's legal system based on German civil law. Source: Djankov et. al. (2007).
Scandinavian legal origin	Dummy indicating a country's legal system based on Scandinavian legal system. Source: Djankov et. al. (2007).
Socialist legal origin	Dummy indicating a country's legal system is Socialist. Source: Djankov et. al. (2007).
Muslim	Dummy indicating the main religion in the country is Islam. Source: La Porta et. al. (1999).
Catholic	Dummy indicating the main religion in the country is Catholicism. Source: La Porta et. al. (1999).

Protestant	Dummy indicating the main religion in the country is Protestantism. Source: La Porta et. al. (1999).
All other religions	Dummy indicating main religion is other than Islam, Catholicism and Protestantism. Source: La Porta et. al. (1999).

Table 2: Summary statistics						
Variable	Mean	Standard deviation	Minimum	Maximum	Observations	Countries
<i>Reform</i>	0.68	0.47	0	1	1409	144
<i>Number of reforms (log)</i>	0.70	0.56	0	2.20	1409	144
<i>Democracy</i>	0.64	0.48	0	1	1409	144
<i>Democracy 2</i>	5.62	3.85	0	10	1409	144
<i>Democracy 3</i>	3.37	1.89	0	6	1409	144
<i>Election</i>	0.23	0.42	0	1	1409	144
GDP per capita (log)	8.57	1.17	6.36	10.50	1361	139
<i>Latitude</i>	0.30	0.19	0.01	0.71	1409	144
Rule of Law	-0.08	0.95	-1.61	1.95	1400	143
Europe and Central Asia	0.29	0.45	0	1	1409	144
East Asia and Pacific	0.13	0.33	0	1	1409	144
Latin America and Caribbean	0.15	0.36	0	1	1409	144
Middle east and North Africa	0.11	0.31	0	1	1409	144
North America	0.01	0.12	0	1	1409	144
South Asia	0.04	0.20	0	1	1409	144
Sub-Saharan Africa (SSA)	0.27	0.44	0	1	1409	144
English legal origin	0.30	0.46	0	1	1385	141
French legal origin	0.47	0.50	0	1	1385	141
German legal origin	0.12	0.32	0	1	1385	141
Scandinavian legal origin	0.03	0.17	0	1	1385	141
Socialist legal origin	0.08	0.27	0	1	1385	141
Muslim	0.26	0.44	0	1	1409	144
Catholic	0.34	0.47	0	1	1409	144
Protestant	0.15	0.36	0	1	1409	144
All other religions	0.24	0.43	0	1	1409	144

Table 3: Correlations between main variables

	(1)	(2)	(3)	"(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
(1) <i>Democracy</i>	1																					
(2) <i>Democracy 2</i>	0.92	1																				
(3) <i>Democracy 3</i>	0.85	0.92	1																			
"(4) <i>Election</i>	0.34	0.4	0.43	1																		
(5) <i>GDP per capita (log)</i>	0.34	0.46	0.5	0.42	1																	
(6) <i>Latitude</i>	0.27	0.36	0.38	0.39	0.55	1																
(7) <i>Rule of Law</i>	0.41	0.56	0.67	0.39	0.77	0.51	1															
(8) <i>Europe and Central Asia (ECA)</i>	0.3	0.35	0.36	0.3	0.44	0.78	0.33	1														
(9) <i>East Asia and Pacific</i>	0.03	0.07	-0.01	-0.05	0.07	-0.15	0.1	-0.24	1													
(10) <i>Latin America and Caribbean (LAC)</i>	0.29	0.24	0.18	0.09	0.04	-0.28	-0.14	-0.27	-0.16	1												
(11) <i>Middle east and North Africa (MENA)</i>	-0.41	-0.38	-0.34	0.05	0.14	-0.02	0.07	-0.22	-0.13	-0.15	1											
(12) <i>North America</i>	0.09	0.14	0.17	0.29	0.18	0.15	0.22	-0.07	-0.04	-0.05	-0.04	1										
(13) <i>South Asia</i>	-0.05	-0.1	-0.09	-0.18	-0.16	-0.05	-0.03	-0.13	-0.08	-0.09	-0.07	-0.02	1									
(14) <i>Sub-Saharan Africa (SSA)</i>	-0.27	-0.32	-0.26	-0.37	-0.6	-0.45	-0.38	-0.38	-0.23	-0.26	-0.22	-0.07	-0.13	1								
(15) <i>Muslim</i>	-0.53	-0.53	-0.49	-0.15	-0.22	-0.13	-0.25	-0.14	-0.14	-0.26	0.53	-0.07	0.03	0.09	1							
(16) <i>Catholic</i>	0.34	0.37	0.37	0.16	0.25	0	0.13	0.07	-0.14	0.51	-0.25	0.04	-0.15	-0.14	-0.44	1						
(17) <i>Protestant</i>	0.28	0.27	0.3	0.07	0.11	0.1	0.24	0.04	0.02	-0.07	-0.15	0.12	-0.09	0.1	-0.25	-0.3	1					
(18) <i>All other religions</i>	-0.06	-0.08	-0.14	-0.08	-0.13	0.05	-0.09	0.04	0.28	-0.24	-0.15	-0.07	0.21	-0.02	-0.35	-0.41	-0.23	1				
(19) <i>English legal origin</i>	-0.07	-0.06	-0.03	-0.12	-0.08	-0.24	0.07	-0.34	0.07	-0.16	0.07	0.18	0.32	0.18	0.06	-0.29	0.35	-0.02	1			
(20) <i>French legal origin</i>	-0.1	-0.13	-0.13	-0.1	-0.2	-0.3	-0.24	-0.24	-0.11	0.33	0.09	-0.11	-0.2	0.11	0.08	0.35	-0.35	-0.19	-0.63	1		
(21) <i>German legal origin</i>	0.23	0.29	0.29	0.23	0.3	0.37	0.29	0.38	0.13	-0.15	-0.12	-0.04	-0.08	-0.22	-0.21	0.11	-0.08	0.16	-0.24	-0.34	1	
(22) <i>Scandinavian legal origin</i>	0.13	0.19	0.24	0.09	0.25	0.34	0.35	0.28	-0.07	-0.07	-0.06	-0.02	-0.04	-0.11	-0.1	-0.12	0.42	-0.1	-0.11	-0.16	-0.06	1
(23) <i>Socialist legal origin</i>	-0.05	-0.13	-0.2	0.08	-0.01	0.33	-0.23	0.41	-0.03	-0.13	-0.1	-0.03	-0.06	-0.18	0.07	-0.21	-0.12	0.26	-0.19	-0.28	-0.1	-0.05

Table 4: Base regression results (full sample): Marginal effects from logit estimation

Dependent variable: <i>Reform</i>									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>Democracy</i>	0.117*** (0.001)		0.115*** (0.001)	0.105*** (0.007)	0.086** (0.015)	0.123*** (0.002)	0.099*** (0.009)	0.204*** (0.000)	0.111*** (0.002)
<i>Election</i>		0.038 (0.162)	0.029 (0.283)	0.022 (0.425)	0.021 (0.438)	0.028 (0.308)	0.023 (0.410)	0.030 (0.273)	0.030 (0.275)
GDP per capita (log)				0.008 (0.572)					
<i>Latitude</i>					0.289*** (0.003)				
Rule of Law						-0.007 (0.714)			
East Asia and Pacific							-0.162** (0.022)		
Latin America and Caribbean							-0.244*** (0.000)		
Middle east and North Africa							-0.108 (0.125)		
North America							-0.506*** (0.000)		
South Asia							-0.179** (0.013)		
Sub-Saharan Africa							-0.238*** (0.000)		
Muslim								-0.040 (0.463)	
Catholic								-0.137** (0.016)	
Protestant								-0.286*** (0.000)	
French legal origin									0.078** (0.038)
German legal origin									0.156*** (0.002)
Scandinavian legal origin									0.002 (0.971)
Socialist legal origin									0.225*** (0.000)
Observations	1,409	1,409	1,409	1,361	1,409	1,400	1,409	1,409	1,385

p-values in brackets. Coefficients shown are marginal effects from logit estimation. All standard errors are Huber-White robust and clustered on the country. Significance level denoted by: *** (1% or less), ** (5% or less) and * (10% or less).

Table 5: Excluding high income countries: Base regression results, marginal effects from logit estimation

Dependent variable: <i>Reform</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>Democracy</i>	0.123*** (0.003)		0.119*** (0.004)	0.082* (0.054)	0.113*** (0.005)	0.101** (0.021)	0.123*** (0.003)	0.196*** (0.000)	0.110*** (0.004)
<i>Election</i>		0.088*** (0.007)	0.082** (0.012)	0.070** (0.039)	0.072** (0.028)	0.077** (0.019)	0.067** (0.040)	0.081** (0.014)	0.076** (0.016)
GDP per capita (log)				0.056*** (0.009)					
<i>Latitude</i>					0.536*** (0.000)				
Rule of Law						0.051 (0.232)			
East Asia and Pacific							-0.338*** (0.001)		
Latin America and Caribbean							-0.441*** (0.000)		
Middle east and North Africa							-0.298*** (0.001)		
South Asia							-0.379*** (0.000)		
Sub-Saharan Africa							-0.404*** (0.000)		
Muslim								-0.059 (0.314)	
Catholic								-0.155** (0.016)	
Protestant								-0.320*** (0.000)	
French legal origin									0.075* (0.061)
German legal origin									0.287*** (0.000)
Socialist legal origin									0.224*** (0.000)
Observations	1,041	1,041	1,041	993	1,041	1,032	1,041	1,041	1,033

p-values in brackets. Coefficients shown are marginal effects from logit estimation. All standard errors are Huber-White robust and clustered on the country. Significance level denoted by: *** (1% or less), ** (5% or less) and * (10% or less). The sample used excluded high-income countries.

Table 6: Base regression results: Marginal effects from logit estimation

Dependent variable: <i>Reform</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>Democracy 2</i>	0.013*** (0.008)		0.012*** (0.009)	0.011** (0.042)	0.008 (0.115)	0.014** (0.012)	0.008 (0.154)	0.021*** (0.000)	0.013** (0.011)
<i>Election</i>		0.038 (0.162)	0.029 (0.283)	0.023 (0.408)	0.022 (0.416)	0.028 (0.299)	0.025 (0.384)	0.029 (0.289)	0.029 (0.291)
GDP per capita (log)				0.007 (0.656)					
<i>Latitude</i>					0.292*** (0.003)				
Rule of Law						-0.014 (0.522)			
East Asia and Pacific							-0.170** (0.014)		
Latin America and Caribbean							-0.233*** (0.000)		
Middle east and North Africa							-0.139* (0.068)		
North America							-0.508*** (0.000)		
South Asia							-0.183** (0.019)		
Sub-Saharan Africa							-0.248*** (0.000)		
Muslim								-0.053 (0.351)	
Catholic								-0.131** (0.026)	
Protestant								-0.271*** (0.000)	
French legal origin									0.080** (0.031)
German legal origin									0.153*** (0.004)
Scandinavian legal origin									-0.013 (0.819)
Socialist legal origin									0.232*** (0.000)
Observations	1,409	1,409	1,409	1,361	1,409	1,400	1,409	1,409	1,385

p-values in brackets. Coefficients shown are marginal effects from logit estimation. All standard errors are Huber-White robust and clustered on the country. Significance level denoted by: *** (1% or less), ** (5% or less) and * (10% or less).

Table 7: Robustness of Reform variable (OLS)

Dependent variable: <i>Number of Reforms</i>									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>Democracy</i>	0.136*** (0.006)		0.135*** (0.007)	0.125** (0.022)	0.091* (0.059)	0.166*** (0.003)	0.090* (0.081)	0.242*** (0.000)	0.123*** (0.009)
<i>Election</i>		0.036 (0.280)	0.025 (0.446)	0.015 (0.641)	0.012 (0.697)	0.026 (0.417)	0.013 (0.685)	0.025 (0.434)	0.019 (0.531)
GDP per capita (log)				0.010 (0.608)					
<i>Latitude</i>					0.418*** (0.002)				
Rule of Law						-0.035 (0.196)			
East Asia and Pacific							-0.255*** (0.001)		
Latin America and Caribbean							-0.299*** (0.000)		
Middle east and North Africa							-0.173** (0.028)		
North America							-0.630*** (0.000)		
South Asia							-0.248*** (0.003)		
Sub-Saharan Africa							-0.314*** (0.000)		
Muslim								-0.061 (0.361)	
Catholic								-0.181*** (0.009)	
Protestant								-0.371*** (0.000)	
French legal origin									0.129*** (0.009)
German legal origin									0.290*** (0.001)
Scandinavian legal origin									-0.015 (0.771)
Socialist legal origin									0.474***
Observations	1,409	1,409	1,409	1,361	1,409	1,400	1,409	1,409	1,385
R-squared	0.014	0.001	0.014	0.014	0.033	0.018	0.076	0.053	0.072

p-values in brackets. All standard errors are Huber-White robust and clustered on the country. Significance level denoted by: *** (1% or less), ** (5% or less) and * (10% or less). Estimation method is OLS with a constant term (not shown).

Table 8: Regression results using the Gastil index: Marginal effects from logit estimation

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>Reform</i>									
<i>Democracy 3</i>	0.023** (0.020)		0.022** (0.023)	0.018* (0.092)	0.012 (0.241)	0.029** (0.021)	0.012 (0.249)	0.042*** (0.000)	0.027** (0.013)
<i>Election</i>		0.038 (0.162)	0.030 (0.274)	0.023 (0.400)	0.023 (0.400)	0.028 (0.293)	0.025 (0.379)	0.028 (0.301)	0.028 (0.309)
GDP per capita (log)				0.009 (0.586)					
<i>Latitude</i>					0.302*** (0.002)				
Rule of Law						-0.021 (0.394)			
East Asia and Pacific							-0.167** (0.013)		
Latin America and Caribbean							-0.229*** (0.000)		
Middle east and North Africa							-0.153** (0.039)		
North America							-0.509*** (0.000)		
South Asia							-0.192** (0.017)		
Sub-Saharan Africa							-0.258*** (0.000)		
Muslim								-0.068 (0.233)	
Catholic								-0.137** (0.019)	
Protestant								-0.283*** (0.000)	
French legal origin									0.082** (0.027)
German legal origin									0.154*** (0.004)
Scandinavian legal origin									-0.026 (0.669)
Socialist legal origin									0.238*** (0.000)
Observations	1,409	1,409	1,409	1,361	1,409	1,400	1,409	1,409	1,385

p-values in brackets. All standard errors are Huber-White robust and clustered on the country. Significance level denoted by: *** (1% or less), ** (5% or less) and * (10% or less). Coefficients shown are marginal effects from logit estimation.