A time to throw stones, a time to reap:
How long does it take for democratic reforms to improve institutional outcomes?

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Abstract: This paper studies the impact of democratic transitions on institutional outcomes in a panel of 135 countries over the period 1984-2012, using an event study method. Our estimates suggest that the bulk of the improvement occurs during the three years following the transition. We can find no anticipation effect in average institutional outcomes. The result is robust to using alternative definition of transitions, alternative codings of pre- and post-transition years, to changing the set of control variables, to excluding former socialist countries from the sample, and to dealing with endogeneity with IV regressions.

When distinguishing full and partial democratic transitions, find that both improve institutional outcomes. However, the former have an effect that is both longer-lasting and eventually larger than the latter. We find that the effect of democratic transitions is conditional on GDP per capita, education, and the regularity of the transition.

When looking at specific components of institutional quality, we find that Bureaucratic quality, Government stability, and Investment profile are insensitive to democratic transitions. Corruption, Law and order, Internal conflict, and Military in politics mimic the behavior of the overall ICRG index. The External conflict sub-index starts improving before transitions, and keeps improving thereafter, while the Ethnic tension Religious tension, and Socioeconomic conditions sub-indices deteriorate.

Keywords: Democratization, democratic transitions, institutions, governance, political risk.

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1. Introduction

Early cross-country studies of the impact of democracy on growth lent little support to the notion that democracies grow faster than non-democracies (Barro, 1991, 1996, Przeworski and Limongi, 1991, La Porta et al, 1999, see Doucouliagos and Ulubaşoğlu, 2008, for a meta-analysis). However, when the focus turned from democracy to democratization, results became both more congruent and more optimistic. Using various methods, and considering various samples and time horizons, Hausmann et al. (2005), Rodrik and Wacziarg (2005), Papaioannou and Siourounis (2008), Acemoglu et al. (2014), and Madsen et al. (2015) all reported consistent evidence that countries that democratize grow faster than before. Now that the notion that democratization speeds up growth has become nearly consensual, the key question becomes why it does. Specifically, one needs to investigate the channels of transmission from democratization to growth.

A straightforward theoretical answer is that democracy stands at the top of a series of institutional outcomes that eventually lead to better policies and economic institutions. Because it constrains a country's rulers, democracy is an institution according to North's (1990, p. 3) definition of institutions as "the rules of the game in a society or […] the humanly devised constraints that shape human interaction". However, as Glaeser et al. (2004) point out, while democracy is undeniably an institution according to North's definition, dimensions of a country's governance, such as the rule of law, corruption or political instability, are institutional outcomes. The key distinction is that while an institution like democracy may be changed virtually overnight, outcomes take time to adjust, if they ever do. Acemoglu et al. (2005) elaborate on this view by defining a "hierarchy of institutions" at the top of which stand political institutions, such as autocracy or democracy, that may eventually affect economic institutions. One cannot take for granted that changes in the level of democracy will trickle down to institutional outcomes that are located lower in the hierarchy of institutions. In other words, the formal revision of a country's constitution does not imply that the behavior of agents resulting in the rule of law, corruption or political instability will instantly adjust. One must therefore study the channels of transmission from democratization to institutional outcomes.

There is evidence that democratizations affect policies. Grosjean and Senik (2011), Rode and Gwartney (2012), Giuliano et al. (2013), or Bjørnskov and Rode (2014) find that democratizations lead to more growth friendly policies. However, we know little about the previous link, linking democratizations and institutional outcomes. Tavares and

Wacziarg (2001) provide a detailed study of the channels whereby democracy may affect growth, and find that political stability may be one. However, the evidence is not robust, and, most of all, rests on cross-country regressions. It is therefore silent on the impact of democratizations, as opposed to democracy, let alone on its timing.

Yet, the timing of the effects of democratizations on institutional outcomes is crucial for at least two reasons. Firstly, institutional outcomes are key determinants of growth and development. This point has been documented at length since the influential contributions of Knack and Keefer (1993), Mauro (1993), Hall and Jones (1999), Acemoglu et al. (2001), or Rodrik et al. (2004). Secondly, how fast institutional outcomes adjust after a democratic transition matters for the stability of that transition. If institutional and economic outcomes remain disappointing, the transition may elicit disappointment and unrest, possibly leading to an autocratic reversal, as Acemoglu and Robinson (2001) suggest.

To our knowledge, only two contributions provide suggestive evidence on the timing of the evolution of specific institutional outcomes around democratizations. As a by-product of a paper that takes growth as its main focus, Giavazzi and Tabellini (2005) find that corruption and property rights tend to deteriorate in the three years preceding democratizations and improve in the four following years. Given that their period of study is only 15 years long, they cannot track the evolution of corruption and property rights beyond four years after democratizations. Secondly, Sunde and Cervelatti (2014) observe that democratization decreases the incidence and the probability of the onset of civil conflicts. As an extension, they distinguish several periods after democratizations, and find that the effect of democratizations materializes in the three following years, and is maintained beyond the seventh year thereafter. In both papers, the timing of the effect of democratizations on institutional outcomes is only a sideline issue. Giavazzi and Tabellini (2005) focus on growth, and Sunde and Cervelatti (2014) on conflicts. Moreover, neither paper takes the evolution of the effect of democratizations over time as its main focus.

In this paper, we precisely focus on the timing of the effect of democratizations on institutional outcomes. We therefore address two imbedded questions. First, we determine whether or not democratizations affect institutional outcomes. Second, we study the timing of that effect. Moreover, we contribute to the literature by studying a broad spectrum of institutional outcomes, ranging from the safety of property rights to ethnic tensions or political stability.

To do so, we apply to institutional outcomes a method that has so far been applied to growth by Papaioannou and Siourounis (2008). More specifically, we study the evolution over time

of institutional indexes around episodes of democratic and autocratic transitions in a panel of 135 countries over the 1984-2012 period. Our estimates suggest that the bulk of the improvement occurs during the three years following the transition. We can find no anticipation effect in average institutional outcomes.

The result is robust to using alternative definition of transitions, alternative codings of pre- and post-transition years, to changing the set of control variables, to excluding former socialist countries from the sample, and to dealing with endogeneity with IV regressions.

When distinguishing full and partial democratic transitions, we find that both improve institutional outcomes. However, the former have an effect that is both longer-lasting and eventually larger than the latter. We also find that the effect of democratic transitions is conditional on the effect of democratic transitions is conditional on GDP per capita, education, and the regularity of the transition.

When looking at specific institutional outcomes, we find that some sub-indices, such as Bureaucratic quality, Government stability, and Investment profile, are insensitive to democratic transitions. Four sub-indices mimic the behavior of the overall ICRG index, namely Corruption, Law and order, Internal conflict, and Military in politics. Finally, four indices show signs of evolution before or during transitions. Among those, the External conflict sub-index starts improving before transitions, and keeps improving thereafter, while the Ethnic tension Religious tensions, and Socioeconomic conditions sub-indices deteriorate.

To reach those conclusions, the rest of the paper is organized as follows. The next section surveys the existing literature to provide a theoretical framework. Section 3 describes our empirical strategy. Section 4 reports our baseline findings, while section 5 provides a series of robustness checks. Section 6 reports extensions of our baseline results. Section 7 concludes.

2. The impact of democracy vs. the impact of democratization

While the impact of the level of democracy on institutional outcomes has been discussed at length, the timing of the impact of democratic reforms, which our main focus, has received little attention. To guide our empirical study, and make our contribution clear, we start by reviewing the extant literature on the impact of the level of democracy. We then grasp insights on the timing of the impact of democratization by looking at contributions that may indirectly shed light on the timing of the impact of democratic reforms.

2.1. The impact of the level of democracy on institutional outcomes

Institutional outcomes are numerous. They range from the safety of property rights to the propensity to be involved in violent conflicts. The effect of democracy may accordingly differ across institutional outcomes. The arguments linking the level of democracy with those institutional outcomes and evidence of those relationships must therefore be surveyed separately.[1] Nonetheless, we observe that the impact of democracy on nearly each outcome is a priori ambiguous.

As democracy is first and foremost a constraint on policy-makers, it should result in safer *property-rights*, according to the classic argument of North (1991) and North and Weingast (1989). However, Przeworski and Limongi (1993) argue that the argument is recent, and that early thinkers of the impact of democracy on property rights were more pessimistic. They recall that David Ricardo or Karl Marx viewed universal suffrage as likely to deteriorate if not abolish property rights, because of the incentive for poorer voters to expropriate the rich. Alesina and Rodrik (1994), Persson and Tabellini (1994), or Acemoglu and Robinson (2001) provide modern treatments of the argument in models where democracies redistribute income towards the median voter. Those precautions notwithstanding, the empirical evidence, provided for instance by Adserà et al. (2003) or Besley and Ghatak (2010), in general points to a positive association between democracy and the safety of property rights, in particular when it is stable, as Clague et al. (1996) report.

Democratic elections allow citizens to select and monitor policy-makers. It should therefore put a cap on *corruption*. Ferraz and Finan (2008) for instance show that voters sanction incumbents convicted of corruption in local election. Elections have therefore been interpreted as a disciplining device in a principal-agent framework. In such a framework, Ferejohn (1986) showed that elections give rulers an incentive to increase effort and align its policies on the policies that the median voter prefers. In a similar framework, Persson et al. (1997) argue that elections associated to effective checks and balances can force the government to refrain to divert resources for private consumption, resulting in less embezzlement. Again, the impact of democracy on corruption is not a priori univocal, because

[1] We focus on institutional outcomes narrowly defined as outcomes that relate to decision making and political violence. Those are the key outcomes that are captured by our dependent variables, described in the next section. We leave aside the impact of democracy on policies and economic reforms. The interested reader may refer to Grosjean and Senik (2011), Rode and Gwartney (2012), Giuliano et al. (2013), or Bjørnskov and Rode (2014).

democracy may ease rent seeking, exposing democracies, young ones in particular, to higher corruption, as argued by Mohtadi and Roe (2003).

Corruption is the institutional outcome that has received by far the most attention, but the evidence about its relationship with democracy remains mixed. Early cross-country studies like Ades and Di Tella (1999) and Fisman and Gatti (2002) found no positive association between political and civil rights and corruption. However, Chowdhury (2004) observes a negative correlation between corruption and a specific indicator of democracy based on voters' participation and the share of the largest party. Iwasaki and Suzuki (2012) observe that democratization is associated with lower corruption in transition countries.

More democratic countries may also be able to deliver more *political stability* and more stable policies. Rodrik (1999) thus argues that countries with democratic institutions are better able to find compromises about how share income shocks, while such shocks will result in unrest in non-democratic countries because the dominant group will try to impose the burden of adjustment to the minority. Henisz (2004) suggests that checks and balances, which are a key feature of democratic regimes, limit the ability of policy-makers to react to short-term incentives to adjust their policies when facing pressure from a narrow group of citizens or an exogenous shocks, both resulting in more stable policies. Dutt and Mobarak (2007) moreover argue that the variance of policies will be larger if decisions are made by an autocratic decision-maker than if decision power is shared more evenly across citizens. The reason is that a larger number of decision makers will be able to aggregate more information about the relevant policy to implement, in a way similar to a Condorcet jury. In a similar vein. Earlier discussions of the merits of democracy were however more pessimistic about its stabilizing property. Tocqueville (1835, Chapter 15) for instance viewed the instability of laws as "an evil inherent in democratic government", because of the whims of voters. The available evidence however lends little support to Tocqueville's pessimism. Henisz (2004) in particular observes that more checks and balances reduce the volatility of public expenditures and revenues while Dutt and Mobarak (2007) find trade and fiscal policies to be more stable in democratic countries.

The most radical form of instability is conflict. Kant (1795) initially coined the concept of "democratic peace" in the context of *inter-country conflicts*, arguing that no majority of citizens would vote to go to war in a republic. Modern versions of the theory suggest several mechanisms reducing the propensity of democracies to wage war. Maoz and

Russett (1993) for instance assume that democracies are equipped with norms that facilitate the peaceful resolution of conflicts. Others, like Choi (2010) argue that democratic leaders face more constrains before going to war. Bueno de Mesquita and Siverson (1995), argue that democratic leaders are more likely to be punished for losing wars. Leaders of democratic countries will therefore avoid starting wars in the first place.

The evidence that democratic countries do not fight each other is so strong that Bueno de Mesquita and Smith (2012, p.166) refer to it as "perhaps the most important empirical regularity linking war and peace to domestic politic". However, the democratic peace argument only applies to pairs of democratic countries, democracies do not seem unilaterally less war-prone. Early work by Wright (1942), Rummel (1968), Small and Singer (1976), Chan (1984), Weede (1984),), and Maoz and Abdolali (1989) accordingly highlighted that there is no relation between regime type and conflict involvement at the country level, as opposed to the dyadic level. Conconi et al. (2014) even observe that the lower propensity of democratic dyads to be involved in wars vanishes when democratic leaders do not face re-election.

The notion of democratic peace has been extended to *civil conflicts*. The idea here is that democratic countries, by being less repressive and more inclusive, will reduce the incentive to start a civil war (Gleditsch et al., 2009). However, as Collier and Rohner (2008) point out, democracy also constrains the possibilities of government repression, which is favorable to rebellion. The impact of democracy on the likelihood of civil conflicts is therefore ambiguous.

Again, the evidence for a pacifying effect of democracy is mixed. Gledisch et al. (2008) observe that full democracies are negatively related to the onset of civil wars and to the severity of wars, measured by the number of battle deaths. However, the relationship seems to follow an inverted-U shape. As a result, countries with intermediate democracy scores are more likely to start civil wars than countries with low democracy scores. Collier and Rohner (2008) moreover find that while democracy is associated with a lower propensity to observe civil conflicts in high income countries, it is associated with more civil conflicts in low income countries.

Before we move to the next section, a final caveat must be made. If the arguments and references reviewed so far disagree on the sign of the effect of democracy on institutional outcomes, they all consider that democracy has an effect. Yet, institutional outcomes may be

invariant to the level of democracy. Two series of arguments thus suggest that democratizations may have a limited impact on institutional outcomes. Firstly, institutional outcomes may be deeply rooted. Roland (2004) thus argues that while democracy is a fast-moving institution, norms and values embedded in culture are slow-moving. In addition, institutional lock-ins may arise because the incentive for individuals to behave honestly is reduced by a damaged collective reputation (Tirole, 1996), because of competitive pressures on bribers or bribes (Shleifer and Vishny, 1993), or because the probability of dishonest behavior being sanctioned becomes very low when a large share of the population behaves dishonestly (Mauro, 2004). Secondly, one may remark that de facto democratization may be of little avail if they are not accompanied with changes in the de facto distribution of power. Acemoglu and Robinson (2008) thus suggest that the elite may compensate lost political power after democratization by greater investment in de facto power, resulting in a captured democracy where policies and economic institutions remain unaffected.

2.2. The timing of the effect of reforms

While the references surveyed above focus on the impact of democracy on the institutional outcomes, they pay little attention to the evolution of institutional outcomes when a country democratizes. Likewise, the empirical evidence essentially rests on regressions of the level of a measure of institutional quality on the level of democracy. In addition, those studies essentially exploit the cross-country dimension of the relation between democracy and the institutional outcomes on which they focus. They therefore pool together countries where reforms were implemented long ago with countries where they are still a work in progress. In truth, we know very little about the timing of the relation between democratization and institutional outcomes.

A couple of contributions focus on that timing. Mohtadi and Roe (2003) provide the most specific discussion of the evolution of institutional outcomes after a democratic transition, as they explicitly consider the relationship between the evolution of corruption as young democracies mature. They assume that democratization facilitates the access of rent seekers to civil servants on the one hand, and on the other hand increases the probability to get caught red handed. In early stages of democratization, the first effect dominates, which results in an increase in the number of rent seekers and the total amount of bribes. However, as democracy makes progress, the second effect eventually dominates. Mohtadi and

Roe's (2003) model therefore suggests that corruption will initially grow after a democratization before decreasing in mature democracies.

Acemoglu and Robinson's (2001) model of political transitions provides a framework to think about the impact on fiscal stability of democratic transitions over time. In their model, the richer elite group may be tempted to mount a coup during recessions to reduce redistribution by restoring an autocratic regime. If income distribution is very unequal, hence redistribution large, the elite will always mount a coup and restore autocracy. Conversely, if the distribution income is equal enough, hence redistribution low, the elite will never find it profitable to mount a coup, and democracy will be consolidated. Between those two extremes, stands unconsolidated democracy. In that situation, voters will adjust redistribution over the business cycle to avoid coups. Fiscal policy in unconsolidated democracies is therefore volatile and democracy itself fragile. As democracy matures, it may reduce income inequality through redistribution, possibly temporarily increasing the likelihood of a coup, and increase the cost of mounting a coup. It will thus eventually become less fragile and fiscal policy will become less volatile. One may infer that the volatility of fiscal policy decreases as time goes by after a democratic transition.

On the empirical side, Giavazzi and Tabellini (2005) look at the evolution around political liberalizations of corruption and a broader measure of political risk measuring five dimensions of the ICRG index (law and order, bureaucratic quality, risk of expropriation and government repudiation of contracts, in addition to corruption), as a side-product of a more general study of the effects of economic and political liberalizations. They report evidence that corruption decreases after political liberalizations, and more mixed evidence of an impact on the broader measure of governance. Their main result is that the effect on governance of political liberalizations and economic liberalizations, defined as increased trade openness and abandonment of a socialist system, tend to add up.[2]

Studying the relation between institutional quality and the age of democracy is an indirect way to provide evidence on the timing of the effect of democracy in cross-country regressions. Clague et al. (1996) thus observe that the number of consecutive years that a country has been a democracy correlates with various measures of the safety of property rights. Treisman (2000) moreover finds that the age of a country's democracy is associated

[2] Our study differs from Giavazzi and Tabellini (2005) chiefly in the focus on a different specific question: the impact of democratic and autocratic transitions instead of the sequence of economic and political reforms. Other differences include the identification of permanent transitions by complementing the information contained in standard democracy indices and the control for potential anticipation effects and for endogeneity.

with lower corruption. Rock (2009) complements Treisman's (2000) by using panel data and including the value and the squared value of the age of democracy. He finds that the coefficient of the level of democracy is significantly positive while the coefficient of the squared term is negative, implying that the relation between the age of democracy and corruption could be hump-shaped. Rock's (2009) estimates imply that corruption first increases during the first decade after democratization before decreasing. Finally, Henderson and Kuncoro (2011) provide evidence specific to Indonesia. They observe that while the country democratized in 1999, corruption declined between 2001 and 2004. The effect of democratization may therefore be faster than what Rock's (2009) estimates suggest, at least in specific countries.

Persson and Tabellini (2009) develop the concept of democratic capital which is related to the age of democracy. They build a model where citizens of a country receive a warm glow from fighting for democracy. The size of the warm glow depends on democratic capital, which is assumed to accumulate while the country is a democracy and depreciates when it is not. As result, democratic countries should be more stable the longest they have been a democracy, because their citizens will more easily fight to defend it. When they take their model to the data, Persson and Tabellini (2009) indeed observe that countries that have been democracies for a longer period of time tend to be more stable and grow faster. Their results however do not allow determining how long it takes for democracies to become stable after the transition.

The impact of democratization on growth has received more attention than their impact on institutional quality. If one assumes that democratizations can affect growth because they affect institutional quality, as Acemoglu et al. (2005) argue, then the findings of the literature on growth indirectly provide an upper bound on the time that democratizations take to affect institutional quality. It may therefore be possible to grasp a few insights from that literature by pointing out the various lags that may occur between institutional reforms and their economic effects.

Hausmann et al. (2005) study the determinants of eighty episodes of growth acceleration in sixty countries over 1950-1992. They identify growth accelerations by focusing on episodes where the growth rate exceeds 3.5 percent, increases by at least 2 percentage points, and over a horizon of 8 years. They subsequently investigate the determinants of the probability of such an episode. They find that growth accelerations are

significantly associated with a change of political regime in a window of five years. Therefore one may infer that regime changes take five years to produce their first effect on growth.

Rodrik and Wacziarg (2005) observe that new democracies, defined as countries that have been democratic for less than five years, experience faster growth. The impact of reforms may thus appear after less than five years. Using a similar method and focusing on aggregate efficiency rather than income, Méon et al. (2009) find that democratic reforms show their full effect after five to six years.

Finally, whereas the previous studies suggest that reforms may produce their effects over a time span of five years, Rodrik (1999)'s reports evidence suggesting that longer horizons should not be ruled out. He studies the determinants of cross-country differences in the difference in average growth rates between the periods 1960-1975 and 1975-1989, in a cross-section of countries. His findings confirm the hypothesis that the quality of institutions is a good predictor of growth rate differences.

Acemoglu et al. (2014) provide a series semi-parametric comparisons of per capita GDP respectively five years and 25-30 years after a democratization with its value during the year of the democratization. They systematically observe that GDP per capita is statistically significantly larger after 25 years. Most of their estimates also suggest that GDP per capita is larger five years after the transition, although the magnitude and the statistical significance of the difference are lower. Their estimates therefore suggest that democratization may affect GDP in the short run, but that the bulk of its effect takes longer to appear.

Madsen et al. (2015) provide evidence over the longest period. They regress per capita income on the lagged level of the Polity2 democracy index over the period 1820-2000 for141 countries. They observe that the coefficient of democracy is significantly positive, which can be considered as a causal effect, since they instrument democracy with linguistic distance-weighted foreign democracy. Because they consider ten-year periods, one can infer from their results that ten years is an upper limit on the time that democracy takes to affect income, hence institutional outcomes.

However, the most detailed estimation of the effect over time of democratization on growth is still provided by Papaioannou and Siourounis (2008). In a series of panel regressions, they regress the annual growth rate of the countries in their sample on five dummy variables capturing five periods around the year of the democratic transition.[3] They observe that the growth rate of democratizing countries is already significantly larger than the

[3] We will describe their method in more detail in the next section, when we apply it to institutional outcomes.

rate of growth of the countries that do not in the period ranging from the first to the third year after the transition. The effect remains significantly positive during the following three years, and beyond the seventh year after the transition.

Overall, the available evidence therefore suggests that if a couple of years is the lower bound of the time that institutions take to affect economic outcomes, twenty years or more should not be deemed unrealistic a priori.

3. Methodology and data

We aim to address two embedded questions: 1. Do democratic reforms affect institutional outcomes? 2. How long do they take? In this section, we first describe our baseline empirical method then the data to which we apply it.

3.1. Econometric strategy

To determine how and how fast democratic transitions affect institutional outcomes, we apply to institutional outcomes the method initiated by Rodrik and Wacziarg (2005), and used by Papaioannou and Siourounis (2008), Méon et al. (2009), Freund and Jaud (2013), or Acemoglu et al. (2014) to study growth or productivity. The method uses a panel of countries, and defines episodes of democratization. It is summarized by the following regression equation:

$$Inst_{i,t} - Inst_{i,t-1} = \alpha\, Inst_{i,t-1} + \sum_{j=1}^{5} \beta_j \cdot D_{i,t}^{j} + \gamma A_{i,t} + \Gamma X'_{i,t} + \phi_i + \eta_t + \varepsilon_{i,t} \qquad (1)$$

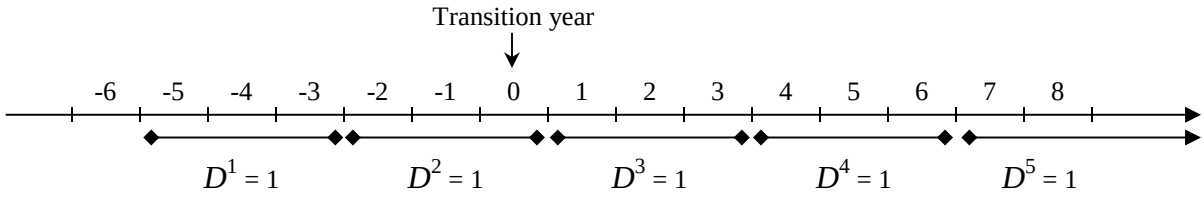
where:

- $Inst_{i,t}$ is a measure of country *i*'s institutional quality in year *t*;
- $D_{i,t}^{j}$ is a series of five dummy variables signaling a democratic transition;
- $A_{i,t}$ is a dummy variable set to one from the year of a change to autocracy;
- $X'_{i,t}$ is a vector of time-variant control variables;
- ϕ_i is a fixed country effect;
- η_t is a year fixed effect;
- α is a coefficient;
- β_j is a coefficient;
- Γ is a vector of coefficients;
- $\varepsilon_{i,t}$ is the error term.

We control for the lagged value of institutional quality to control for convergence effect.

The key variables of interest are the five $D_{i,t}^{j}$ dummies that capture the timing of democratic transitions. They follow Papaioannou and Siourounis's (2008) coding. $D_{i,t}^{1}$ and $D_{i,t}^{2}$ the evolution of the dependent variable in the years preceding the transition. Specifically, $D_{i,t}^{1}$ is set equal to one in the fifth, fourth, and third pre-democratization years while $D_{i,t}^{2}$ is set to one in the second and first pre-democratization years and the transition year. $D_{i,t}^{3}$ is set to one during the first, second, and third years after the transition. $D_{i,t}^{4}$ is set to one at the fourth, fifth, and sixth post-transition year. Finally, $D_{i,t}^{5}$ equals one from the seventh year after the transition onwards. All dummies are equal to zero elsewhere. They are also set to zero if the democratic transition was reverted within five years. Figure 1 summarizes the definition of those dummies.

Figure 1: Definition of democratic transition dummies



That coding of the timing of transition allows capturing anticipation effects and the unrest leading to the transition thanks to $D_{i,t}^{1}$ and $D_{i,t}^{2}$. The other three variables capture the aftermath of the transition, from the short run, with $D_{i,t}^{3}$, to the long run, with $D_{i,t}^{5}$. The implicit base period is the non-democratic years.

As Papaioannou and Siourounis (2008) point out, the above regression constitutes a difference-in-difference model, where countries that have undergone a transition are the treated group, while non-reforming countries serve as the control group. Thanks to the inclusion of country and year fixed-effects, coefficients β_j measure the change in institutional

quality between two years. The change is allowed to differ across the five periods over which variables $D_{i,t}^{j}$ are defined and capture the democratic transition window.

An important condition for the method to lead to unbiased estimates is that transitions be exogenous. That assumption can be backed by the fact that revolutions are to a large extent unpredictable, as Kuran (1989, 1991) argues. Bueno de Mesquita (2010) provides a model of regime changes that produces multiple equilibria. Gorodnichenko and Roland (2015) relate the probability to democratize to a country's culture, which varies little over time. As a result, transitions can only be loosely related to other variables.

We test the assumption that countries that undergo a transition do not differ from the others before the transition by checking that the coefficients of dummy variables $D_{i,t}^{1}$ and $D_{i,t}^{2}$ are statistically insignificant. This finding would signal that the countries that underwent a transition followed the same trend as, and were therefore not different from, the rest of the sample before the transition. In any case, we will address endogeneity with IV regressions in the robustness checks section.

3.2. Data

Indicators of institutional outcomes

The dependent variable must be time-variant and available over a long enough time span, and its variations over time must be meaningful. The International Country Risk Guide (ICRG) political risk rating, published by the Political Risk Services Group, fulfills those constraints. It has been published yearly since 1984. The ICRG political risk rating is based on experts' subjective evaluations. It is computed as a weighted average of 12 individual political risk indicators spanning all the dimensions of a country's institutional framework.[4] Among those individual indicators, Democratic accountability is directly related to democratic transitions. Regressing an index containing that indicator on an indicator of democratization would be tautological. We therefore computed a "democratic accountability-free" ICRG index as the sum of the eleven other basic components. That index provides a broad assessment of the quality of institutions, but abstracts from democracy. It ranges from zero to 94, with higher values reflecting a better quality of institutions. We refer to it as the $ICRG_{11}$ index, because it is computed on eleven components out of twelve. In our sample the

[4] Those basic dimensions are Government stability, Corruption, Law and Order, Investment Profile, Socioeconomic Conditions, Internal Conflict, External Conflict, Military in Politics, Religious Tensions, Bureaucracy Quality, Democratic accountability, and Ethnic Tensions.

$ICRG_{11}$ index ranges from 13.25 to 91, with a mean of 61.85 and a standard deviation of 14.52.[5]

One may argue that simply summing components is an arbitrary way to aggregate the information contained in individual components, and that those components should be reweighted to adjust to dropping the democratic accountability component. To cater for that criticism, we also use the first component of the eleven components of the $ICRG_{11}$ index as the dependent variable.[6] By doing so, we allow the weight of each indicator to be determined endogenously.[7]

Indicators of democratic and autocratic transitions

To identify reforms, we update the dataset constructed by Papaioannou and Siourounis (2008). In that dataset, a country is considered as democratic if it meets four conditions: legislative or presidential elections are free and fair; civil liberties and political rights are respected; the franchise is inclusive for the majority of the population; and the elected officials enjoy real governing capacity.

To identify the countries that meet those criteria, we followed the same algorithm as Papaioannou and Siourounis (2008). We made a first selection of transitions using the PolityIV index and the Freedom House index.[8] More specifically, we created a list of transitions containing all the country-years during which the PolityIV index had moved from a negative to a positive value or the Freedom House index had changed from not free to partly free or free, or from partly free to free. We then checked the political context of each transition to confirm its timing and check that it truly corresponded to a democratization. In doing so, we used archival sources and alternative datasets, such as the updated version of

[5] The descriptive statistics of all variables are reported in Table A1 in the appendix.

[6] We focus on the first component in our computations, because it accounts for 51 percent of the variance of the eleven components of the ICRG index on which we focus. Moreover, the factor loadings of the eleven components on the first component are all positive. Conversely, the factor loadings on the other components of some components of the ICRG index can be negative, which is difficult to interpret. The result of the principal component analysis is reported in the appendix, in Table A2.

[7] A caveat of the ICRG index is that it is a subjective measure of the quality of institutional outcomes. One may however remark that, because it pools the assessments of various experts, their individual biases may cancel out, allowing the index to capture countries' true institutional quality. Moreover, the index has been repeatedly found to correlate with objective measures of economic performance. Accordingly, the evolution of the index around democratic transitions matters even if one believes that it reflects nothing more than the prejudices of experts, and thus impacts the information set and the decision of foreign stakeholders. The publisher of the index, Political Risk Services, precisely makes a living by selling it to foreign stakeholders. Sceptics may therefore interpret our results as describing the impact of democratic transitions on the assessment of a country's risk by experts.

[8] Freedom House's ranking of countries can be downloaded from their website: https://freedomhouse.org/.

Przeworski et al.'s (2000) dataset by Cheibub et al. (2010). The transition year is defined as the year of the adoption of a new constitution or of the first democratic election. Finally, we dropped transitions that did not last more than five years, because, as Papaioannou and Siourounis (2008) argue, they correspond to instability rather than true democratizations.

We capture anti-democratic reforms in the same way. To save on space, we only consider one autocratic transition dummy set the autocratic reform dummy to one from the year of the transition onwards.

Our dataset contains 44 democratic transitions observed in 42 countries. Table A1 in the appendix reports descriptive statistics, while Table A2 describes the distribution of dummy variables D^j and A, and Table A3 lists the transitions that appear in our dataset. Overall, our dataset contains 135 countries observed from 1984 to 2012.

4. Baseline findings

In this section we first describe the evolution of the $ICRG_{11}$ index around democratic transitions and run a series of non-parametric tests. We then report our baseline econometric results, before turning to examples of specific democratic transitions.

4.1. A first look at the data

Figure 2 below describes the evolution value of the $ICRG_{11}$ index relative to the world average around democratic transitions.[9] The index is normalized to zero in the year of the transition to ease comparisons.

[9] Specifically, for each country-year observation, we subtract the world average $ICRG_{11}$ index in that year from the country's $ICRG_{11}$ index in that year.

Figure 2: Evolution of the $ICRG_{11}$ index around democratic transitions

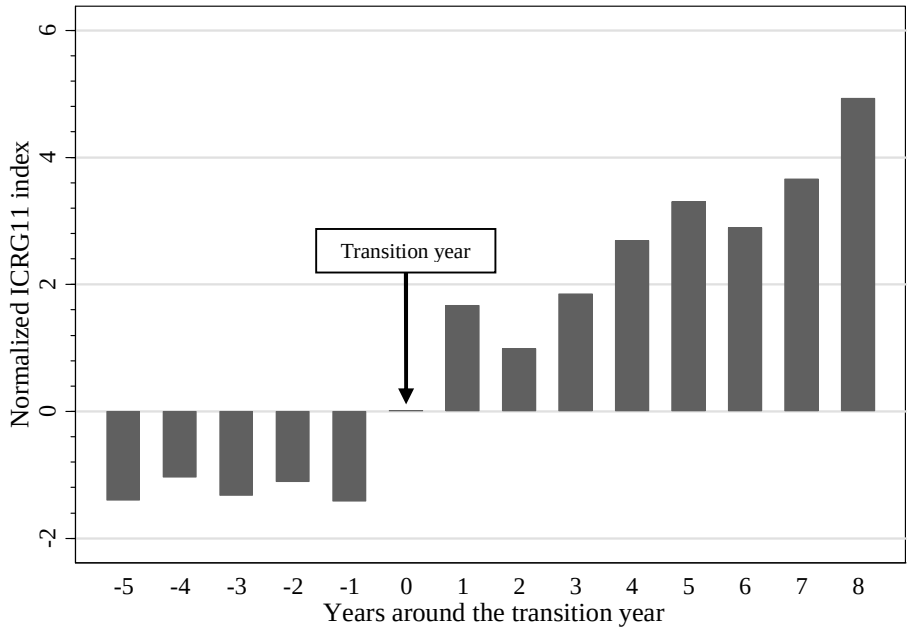


Figure 2 shows a clear difference between the evolution of the $ICRG_{11}$ before and after transitions. The index follows no particular trend prior to the transition. However, it markedly improves and trends upward after the transition. The figure therefore suggests that democratic transitions are associated with improvements in the $ICRG_{11}$ index.

We complement the descriptive statistics reported in Figure 2 by a non-parametric test. We test whether the $ICRG_{11}$ index in a given year around the transition is statistically different from its value in the year of the transition. Specifically, we perform a series of 13 paired t-tests that are reported in Table 1 below.

*** Insert Table 1 around here ***

The results reported in Table 1 closely follow those of Figure 2. We thus observe that the $ICRG_{11}$ index in the five years preceding democratic transitions does not significantly differ from its value in the transition year at standard levels of confidence. The year immediately preceding the transition is an exception, as the difference with the transition year is significant at the five-percent level. This is because the index jumps in the transition year, increasing by 1.4 points with respect to the previous year.

The finding that the index follows no specific behavior prior to the transition is noteworthy, because it suggests that countries where a transition occurs are not statistically

different from other countries during the five years leading to the transition. It therefore lends credence to a causal interpretation of the econometric estimates that will be reported in the next sections.

The $ICRG_{11}$ index keeps on increasing after the transition. Moreover, the difference between the index in the transition year and in the following years is always statistically significant at the one-percent level. As a result, five years after the transition, the index is on average 4.48 points larger than in the transition year. It is 5.88 points larger than in the year immediately preceding the transition. This is substantial, as it amounts to 40 percent of the standard deviation and nearly ten percent of the mean of the $ICRG_{11}$ index in our sample.

4.2. Baseline econometric estimates

Table 2 reports the results of the estimations of Model 1 using ordinary least squares, with heteroscedastic-consistent standard errors clustered at the country level. Regressions 2.1 and 2.2 use the $ICRG_{11}$ index as their dependent variable, while Regressions 2.3 and 2.4 use the principal component of the eleven sub-indices of the ICRG index as their dependent variable.[10] In both cases, we first estimate Model 1 without controlling for autocratic transitions before including the autocratic transition dummy in the set of explanatory variables.

*** Insert Table 2 around here ***

In Table 2, the adjusted R-squared rounds to 18 percent, which is reasonably high, and the F-test rejects the hypothesis that all coefficients are jointly zero in all regressions. Looking at individual coefficients, one finds that the coefficient of the past value of the institutional quality index bears a coefficient that is negative and significant at the one-percent level. This is in line with the notion that countries with a better initial institutional quality find it more difficult to improve it further.

Table 2 reports no evidence of a pre-democratic transition change in the dependent variable. Specifically, in no regression are the coefficients of dummy variables D^1 and D^2, which cover the years leading to the transition, statistically significant. As pointed out in previous section, this finding is important, because it confirms that countries where a transition occurs are not statistically different from other countries during the five years

[10] The factor loadings of the eleven sub-indices of the ICRG index are reported in Table A4 in the appendix.

leading to the transition, and therefore gives weight to a causal interpretation of the coefficients.

The key result, however, appears when one looks at the coefficients of the dummy variables capturing democratic transitions. The results are robust across the four regressions reported in Table 2. The first dummy that appears significant in all regressions is dummy D^3, which is equal to one during the first, second, and fourth years after the transition. Its coefficient is significant at the one-percent level in all regressions. It therefore suggests that the effect of democratic transitions can appear in a fairly short term.

The coefficient of dummy variables D^4 and D^5 is statistically insignificant at standard levels of significance in all regressions, suggesting that the bulk of the improvement in institutional quality is obtained within the three years following the transition.

We observe a negative impact of autocratic transitions on institutional outcomes. The coefficient of dummy variable A is statistically significant at the five-percent level of confidence in both regression 2.2 and 2.4.

To put our preliminary results in a nutshell, democratic transitions do have a positive and significant effect on institutional outcomes. Our baseline estimates suggest that the bulk of the improvement occurs during the three years following the transition, and we can find no anticipation effect.

The results hold qualitatively both when the $ICRG_{11}$ and the principal component of the eleven sub-indices are used. The results are therefore not driven by the way in which the information contained in the components of the ICRG index was aggregated.

Quantitatively, the $ICRG_{11}$ index improves by approximately 1 point per year during the three years following the transition. During the same years, the principal component improves by 1.4 points per year, resulting in an improvement of nearly 4.2 points three years after the transition. This is not negligible, as the mean of the principal component is 63.16 and its standard deviation 19.78.

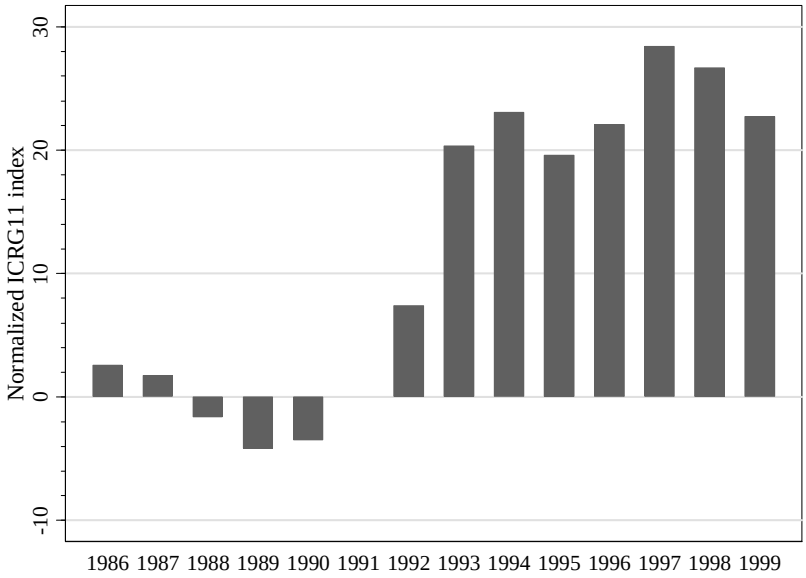
4.3. Illustrative examples

In this section, we illustrate our findings using four specific democratic transitions that took place in Asia, Africa, Europe, and Latin America. Namely, we briefly discuss the transitions of Bangladesh, Senegal, Hungary, and Nicaragua.

Bangladesh was ruled by President Hossain Mohammed Ershad since a 1982 military coup. In October 1990 student protests evolved into mass protests culminating in a march on

Dhaka on December 4 that led to the resignation of Hossain Mohammed Ershad and free elections in February 1991. The election was won by the Bangladesh Nationalist Party, led by Khaleda Zia, who became prime minister. Between the 1991 transition and the end of the transition window in 1999, Bangladesh remained a parliamentary democracy. Elections were held again in 1996, resulting in the Bangladesh Nationalist Party being defeated by the Awami League, headed by Sheikh Hasina. The two parties have kept on alternating in power, with a hiatus between January 2007 and December 2008, when the military imposed a caretaker government to combat corruption.

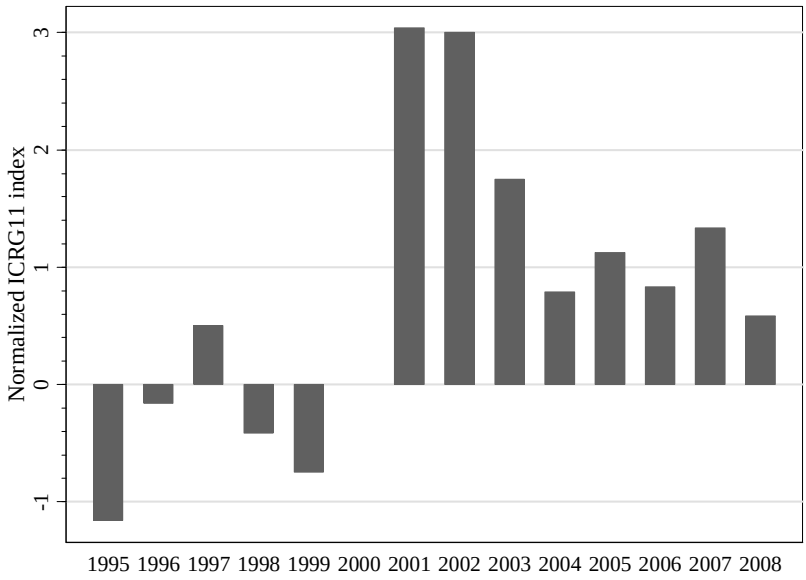
Figure 3: Evolution of the $ICRG_{11}$ index in Bangladesh



In the year of the transition, 1991, the country's $ICRG_{11}$ index amounted to 31.75, putting the country in the fourth percentile of the sample. Indeed, over the transition window ranging from 1986 to 1999, the country's $ICRG_{11}$ index never exceeded our sample's mean. However, the transition was followed by a marked improvement of the index. During the five years preceding the transition year, the index oscillated between 2.58 points above and 4.17 points below the value of the transition year, leaving the country in the sample's fifth percentile of the $ICRG_{11}$ index. A year after the transition, in 1992, the index had increased by 7.42 points with respect to its 1991 value. It then fluctuated between 19.58 and 28.42 points above its value in 1991. The ICRG11 index thus neared the sample's median. Although it slightly decreased after the transition window, it remained 15 points, nearly one standard deviation above its value before the transition.

The transition in Senegal was peaceful. It occurred in 2000, when Abdoulaye Wade won the presidential election against former president Abdou Diouf, thereby ending an uninterrupted control of the government by the Socialist Party since independence. The dominance of a single party was facilitated by constraints on the number of political parties until 1981, and advantages in terms of access to state resources and the media granted to the incumbent by the electoral code until 1991. As a result, Huntington (1991) deemed Senegal a "semi-democracy".

Figure 4: Evolution of the $ICRG_{11}$ index in Senegal

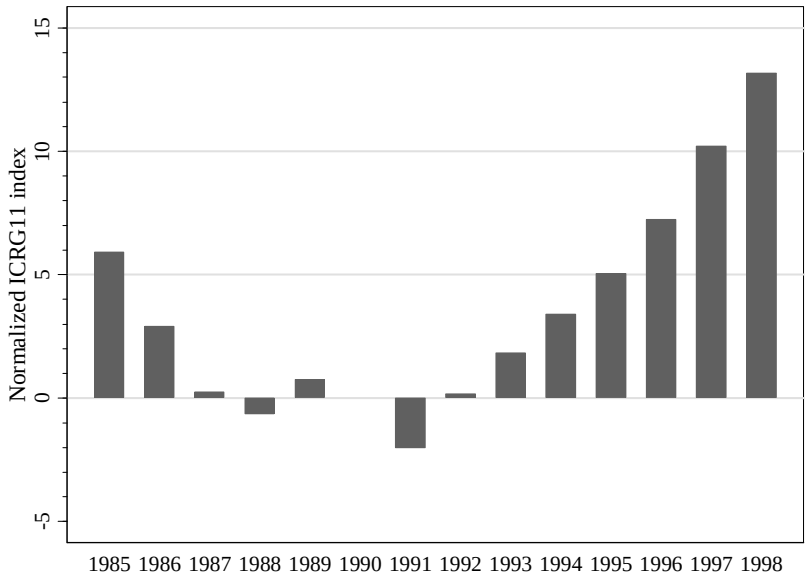


When Senegal transited to democracy, in 2000, its $ICRG_{11}$ index stood at 54.92, putting the country in the 35^{th} percentile of the distribution of the index. Before the democratic transition, the index fluctuated between 1.17 points below and 0.5 points above its 2000 value. In the year following the transition, the index increased by three points for a couple of years, before it decreased and stabilized around one and a half point above its transition year value for the rest of the transition window.

The transition in Hungary was part of the wave that swept over the socialist block in the late 1980s early 1990s. It started in May 1988, when János Kádár, general secretary of the communist party since 1956, retired and was replaced by former prime minister Karoly Grosz, a moderate reformer. His prime minister was Miklós Németh, a more radical reformer. Although the parliament passed a "democracy package" granting concessions such as trade union pluralism and freedom of association, the true transition occurred when on 15 March

mass demonstrations prompted the regime to start talks with the opposition. Those talks led to an agreement on a constitutional reform eventually passed by the parliament between 16 and 20 October 1989. Free parliamentary elections were held on March 24 1990. They resulted in a coalition government led by Prime Minister József Antall comprising three parties.

Figure 5: Evolution of the $ICRG_{11}$ index in Hungary

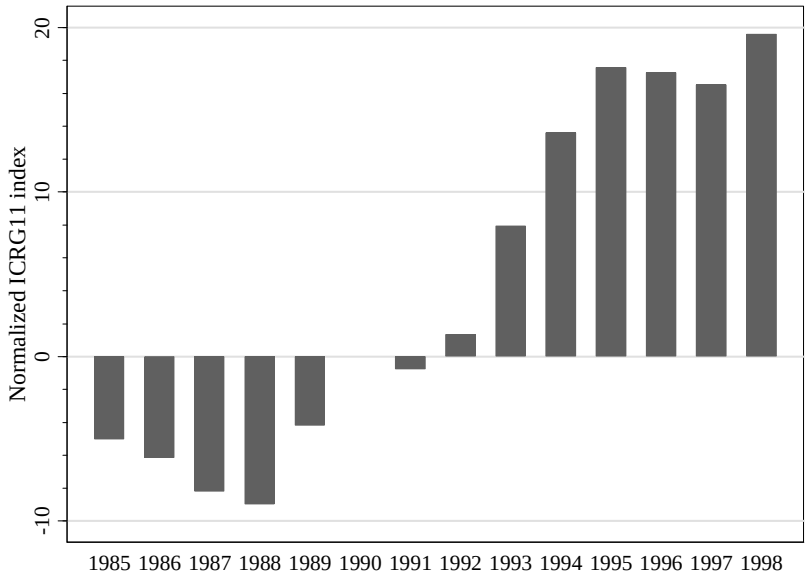


The first year of the transition window corresponds to the appointment of Mikhail Gorbachov as General Secretary of the Communist Party of the Soviet Union. The general uncertainty surrounding socialist countries at the time, likely explains why the $ICRG_{11}$ index decreased from 5.92 to to 0.25 points above the transition year value between 1985 and 1987. The index then oscillated around 67 until the transition year 1990. Whereas the index declined to 65 in the year directly following the transition, putting the country in the 63rd percentile of the distribution, it started rising in 1993. It kept on increasing until 1998, the final year of the transition window, when it was 13.17 above its transition year value, a value comparable to those of Western democracies.

Nicaragua experienced a partial democratization in 1990 when the first free and fair elections after the Somosa dictatorship and the Santinistas revolution were held. The civil war waged between the left-wing Sandinista National Liberation Front, who officially held the government, and Contras, a coalition of rebel groups, had ended the year before. The election was held on February 25, 1990. Incumbent President Daniel Ortega was defeated by Violeta

Chamorro, who was leading a forty-party anti-Sandinista coalition, the National Opposition Union.

Figure 6: Evolution of the $ICRG_{11}$ index in Nicaragua



When Nicaragua experienced its democratic transition, its $ICRG_{11}$ index was 42.42. In the five years preceding the transition, Nicaragua's $ICRG_{11}$ index had fluctuated between 5 and 8.17 points below its value in the transition year, never leaving the lowest decile of the distribution of the index. After having decreased by 0.75 points in the following year, it started increasing, and reached a plateau oscillating around 16 points above it transition year value at the end of the transition window.

5. Robustness checks

In this section, we check the robustness of the results of previous section. In particular, we consider alternative definitions of democratic transitions, and alternative coding of their effects, and extend the set of control variables.

5.1. Alternative definitions of transitions

Our baseline results are based on the definition of democratic transition by Papaioannou and Siourounis (2008), which aggregates information from three datasets and archival work. To check whether our results are robust to the way in which democratization episodes are robust, we select democratization episodes using three basic datasets separately.

First, we define democratic transitions using the information contained in the PolityIV index. We thus consider that a transition occurred in year *t* if the PolityIV index moved from a negative value in the previous year to a positive value in year *t*, and no backward transition occurred in the following five years. Second, we define a transition based on the Freedom House status. Specifically, we consider that a transition occurred in year *t* if a country's status moved from not free to free or partly free or from partly free to free. Finally, we also directly used the classification of democratic transitions by Acemoglu et al. (2014), which essentially refines Papaioannou and Siourounis's (2008) by aggregating more data sources. The results obtained with those alternatives definitions of transitions are reported in Table 3. In all the regressions reported in that table, the value of the adjusted R-squared hardly changes with respect to its value in the baseline regressions, and the F-test still rejects the hypothesis that all coefficients are jointly zero. Again, the coefficient of the past value of the institutional quality index bears a negative coefficient that is significant at the one-percent level. Moreover, in none of the three regressions are dummy variables D^1 and D^2 significant, confirming the absence of anticipation effect and giving weight to a causal interpretation of our results.

*** Insert Table 3 around here ***

The results obtained with transitions defined thanks to the PolityIV index are reported in the first column of Table 3. They confirm that the first dummy to bear a significant coefficient is dummy D^3, which is positive and significant at the ten level. Accordingly, the first sign of an improvement in institutional quality can be observed during the three years following the transition. Dummy variable D^4 now turns insignificant at standard levels of significance, like dummy D^5.

The second column of Table 3 reports the results obtained when transitions are defined by an improvement in the Freedom House index. Those results are very close to those of the first column. Specifically, D^3 is the first dummy variable to bear a significant coefficient. It is moreover positive and significant at the five-percent level.

The results based on Acemoglu et al. (2014) are reported in Column 3.3. They are very much in line with those of the first two columns. Specifically, D^3 bears a coefficient that is both positive and significant at the five-percent level of confidence. Like in previous regressions, the coefficients of dummy variables D^1 and D^2, which captures the years preceding the transition and the transition year, are statistically insignificant.

The first series of robustness checks therefore shows that our findings are not specific to any particular definition of democratic transitions. Using three data sources confirms that there is evidence that democratic transitions improve institutional outcomes during the three first years following the transition, while we can find no specific behavior before democratic transitions.

5.2. Alternative timings

To capture the timing of the impact of transitions, we have so far distinguished five periods within our event study window. That definition of dummy variables allows studying the timing of the effects of transitions. However, if the timing of the effect in different countries was staggered and differed for instance by a couple of years then the estimated effect could be biased. A way to make sure that the timing that we assume in our baseline regressions is not too specific is to use a specification that imposes less structure on the estimated relationship. We therefore estimate a specification where we define a single dummy variable capturing the transition. This variable, D^{Total}, is set to one in all years following the transition. In other words, it is simply the sum of D^3, D^4, and D^5, and signals that a transition has occurred. In a regression controlling for fixed country- and year-effects, the coefficient of that dummy variable allows comparing the evolution of institutional quality after the transition with its evolution before the transition. Such a coding of democratic transitions is for instance used by Acemoglu et al. (2014).

*** Insert Table 4 around here ***

The results of the regressions using a single democratic transition dummy variable are reported in Table 4. All regressions control for country- and year-fixed effects. The regression reported in Column 4.2 complements that reported in Column 4.1 by controlling for autocratic transitions. In both regressions, the F-test rejects the hypothesis that all coefficients are zero. Also, the coefficient of the lagged value of the dependent variable is negative and statistically significant, like in previous regressions.

Most of all, the coefficient of dummy variable D^{Total} is positive and significant at the five-percent level in both regressions, suggesting that institutional quality on average increases after democratic transitions. Besides, we observe that the coefficient of dummy variable A is negative and significant at the five-percent level.

One may argue that when defining D^3, D^4, and D^5 we have pooled years that are different. To check the impact of this grouping of years, we now define one dummy variable for each year of the study window, ranging from five years before the transition to six years after the transition. Dummy variable D^5 is, however, defined in the same way as before. It thus still captures the variation of institutional quality in all the years from the seventh year after the democratic transition onwards.

This definition of dummy variables is not costless, as it assumes a much more specific timing of the effects of transitions than our baseline specification, thereby exacerbating the risk of muting the effect.[11] We therefore did not use this definition of dummy variables as our baseline specification, but consider it as a robustness check.

*** Insert Table 5 around here ***

Table 5 reports the result of the regression using the alternative coding of transition dummy variables. Again, the adjusted R-squared remains close to its value in the baseline regressions, the F-test rejects the hypothesis that all coefficients are jointly zero, and the coefficient of the past value of the institutional quality index exhibits a negative coefficient significant at the one-percent level.

In Table 5, none of the dummy variables capturing pre-transition years or the transition year is significant at standard levels of significance. Again, this suggests that transitions were not anticipated.

The dummy variable capturing the first year after the transition, which was formerly included D^3, is positive and significant at the one-percent level. It suggests that the short run effect of the transition can appear very fast. The dummy variable capturing the third year after the transition is also significant and positive, though only at the ten-percent level. The dummy variables capturing the second year after the transition, which was also included in D^3, is statistically insignificant.

[11] Imagine for instance that the effect of a transition on institutional quality appears after exactly 13 months in all countries. Assume further that, in year *t*, Country *A* switches to democracy in January, while Country *B* switches to democracy in December. The improvement in institutional quality in Country *A* will be recorded in year $t + 1$ while it will be recorded in year $t + 2$ in Country *B*. Pooling years in batches of three reduces the likelihood of that possibility, while considering years separately introduces noise in the relationship between transition dummies and institutional quality.

Table 5 also reports that the dummy variable capturing the fourth year of the transition is positive and significant at the five-percent level. This finding confirms that democratic transitions improve institutions in the medium run, as the positive sign of D^4 suggested in previous regressions. However, the dummy variables capturing the fifth and the sixth years after the transition, which were also captured by D^4, are statistically insignificant. The bulk of the medium run effect may therefore appear after four years.

Table 5 reports no further improvement as time goes by after the fifth year after the transition, as all the transition dummy variables are statistically insignificant. The results of Table 5 therefore suggest that most of the improvement in institutional quality happens within the four years after democratic transitions.

The two robustness checks reported in this subsection confirm that institutional quality improves after democratic transitions. Our baseline results are therefore robust to the timing assumed in the estimated specification.

5.3. Control variables

Our results so far rest on specifications where time invariant country characteristics are controlled for thanks to country fixed effects and evolutions common to all countries in a given year by year fixed effects. For the sake of parsimony, we have not included control variables in addition to country- and year-fixed effects. In spite of being parsimonious, this strategy may bias our results due to omitted variables. Moreover, this strategy does not allow explicitly identifying the impact of specific time-invariant country characteristics on institutional quality. In this section, we therefore include time-variant control variables in our estimations, then estimate Model 1 without country fixed effects, to explicitly control for several series of time-invariant characteristics. The results of those estimations are reported in Table 6.

*** Insert Table 6 around here ***

While Regression 6.1 only adds time-variant control variables to Model 1, Regression 6.2 controls for those variables but drops country-fixed effects to provide a benchmark for the subsequent regressions. Regression 6.3 adds regional dummy variables, with regions defined according to the World Bank's classification. Regression 6.4 drops regional variables but includes dummies capturing countries' legal origin. Finally, Regression 6.5 controls for all three series of variables.

All the estimations reported in Table 6 control for GDP per capita, openness to trade, secondary enrolment, the ratio of government consumption to GDP (all are from the World Development Indicators database), and press freedom (from Freedom House's 2014 historical dataset). Friedman (1962) emphasized the role of economic openness in fostering democracy, arguing that the diffusion of liberal norms may exert pressure on autocrats to expand political rights. Education is one of the requisites of democracy according to Lipset (1959), and could also affect institutional outcomes according to Botero et al. (2013). Brunetti and Weder (2003) argue that press freedom is a check on corruption. GDP, education, and a free press have in addition all been found to correlate with at least one dimension of institutional quality (see e.g. early contributions by Treisman, 2000, Wei, 2000, Brunetti and Weder, 2003).

In all estimations, GDP per capita exhibits a positive sign significant at the one-percent level, in line with the notion that better-off countries also have better institutional quality, as already observed by Treisman (2000). Openness and secondary school enrolment also bear a positive sign, statistically significant at the five-percent level and beyond, suggesting that more open countries and countries with more widespread secondary education benefit from better institutions, except in Regression 6.1 that controls for fixed country effects. The positive impact of openness is in line with Friedman's (1962) contention. Press freedom exhibits a positive sign significant at the one-percent level in all Regressions except in Regression 6.1, consistent for instance with the finding of Brunetti and Weder (2003). Finally, government size bears an insignificant coefficient in all regressions, except in Regression 6.1, where it is significantly negative at the one-percent level.

In all those regressions, dummy variables D^1 and D^2 are statistically insignificant, confirming the absence of anticipation effect. In those regressions, the coefficients of D^4 and D^5, though positive, fail to be statistically significant at conventional levels of confidence. However, in all four regressions, the coefficient of D^3 is positive and significant at the five-percent level or beyond, confirming that institutional quality improves in the three years following a democratic transition. Overall, those results confirm that democratic transitions are followed by an improvement of institutional quality, and are therefore in line with those of baseline estimations.

5.4. Alternative sample

Our period of study spans the end of the Cold war, which resulted in former soviet countries undergoing at the same time a democratic transition and a transition to a market

economy. In addition, some countries started a process of integration in the European Union. Because those countries may affect our results, we ran specific regressions where former socialist countries were dropped from the sample. Those regressions are reported in Table 7. As before, we first report a regression where only democratic transitions are controlled for then add the dummy variable controlling autocratic transitions.

*** Insert Table 7 around here ***

The regressions reported in Table 7 confirm our baseline findings. Specifically, they confirm that democratic transitions prompted no anticipation effect, as the coefficients of dummy variables D^1 and D^2 are statistically insignificant in all regressions. Secondly, they show that the effect of democratic transitions is positive and appears in the three years following the transition, since the coefficient of dummy variable D^3 is positive and statistically significant at the one-percent level of confidence. Finally, we observe that the coefficients of D^4 and D^5 are statistically insignificant at standard levels of significance. Previous findings were therefore not driven by former socialist countries.

5.5. IV estimates

As argued above, the timing of transitions is to a large extent exogeneous. In addition to being efficient, OLS estimated should therefore also be unbiased, which is why we have used OLS in our baseline regressions. However, to make sure that our results do not suffer from an endogeneity bias, we now report 2SLS estimates. To do so, we follow Acemoglu et al. (2014), and instrument democratic transitions with regional democratization waves. Specifically, we compute for each country-year the average democracy score in the same geographic region, excluding the country of interest, and use that average as an instrument for our independent variables, which we label $\overline{D}$.[12]

However, when doing so we must be careful because of the difference between Acemoglu et al.'s (2014) approach and ours. Acemoglu et al.'s (2014) instrument was designed to instrument a dummy variable taking the value one when a country is a democracy. Accordingly, it allows predicting the probability that a country be a democracy in a given year. Technically, it was designed to instrument a variable that in our approach is the

[12] Democracies are defined according to Papaioannou and Siourounis's (2008) definition. Geographic regions are those defined by the World Bank.

sum of D^3, D^4, and D^5, and is equivalent to dummy variable D^{Total} that we used in section 5.2. In a nutshell, the instrument essentially allows predicting the probability that country *i* is a democracy in year *t*. As a first check we use that instrument to instrument D^{Total}.

However, if doing so is technically sound, it can only be a first step, as it does not capture the timing of the effect of democratic transitions, which is our focus. We therefore use the same instrument and its lagged values to instrument for dummy variables, D^1, D^2, D^3, D^4, and D^5.

*** Insert Table 8 around here ***

The first column of Table 8 reports the outcome of instrumenting D^{Total} using the first and second lags of *DI*. As far as D_1 to D_5 are concerned, each of them is instrumented using six lags of $\overline{D}$. The first-stage F-test statistic is well above the rule-of-thumb threshold of 10 proposed by Staiger and Stock (1997), indicating that the instruments are strong .Moreover, the Sargan test for overidentification rejects does not allow rejecting the hypothesis that the residuals are uncorrelated with the instruments i.e. valid.

More to the point, in the first two columns of Table 8, we observe that the coefficient of D^{Total} is positive and significant at the one-percent level, confirming that countries that democratize do improve the quality of their institutions. This is true regardless of whether we control for autocratic transitions or not, which moreover virtually does not affect the magnitude of the coefficient of democratic transitions.

The third column of Table 8 reports the outcome of instrumenting the whole set of dummy variables capturing the timing of the effect of democratic transitions. Again, the first-stage F-test statistic exceeds the threshold of 10, and the Sargan test suggests that there is no overidentification. If we look at individual dummy variables, we observe that the coefficients of both D^1 and D^2 are statistically insignificant at standard levels of confidence. Accordingly, IV estimates confirm an absence of anticipation effects. The coefficient of variable D^3 and D^5 are positive and significant at the five-percent level. By contrast, the coefficient of D^4 is statistically insignificant. Those findings are robust to controlling for the effect of autocratic transitions, which affects neither the statistical significance nor the magnitude of the coefficients of the dummies capturing democratic transitions.

6. Extensions

In this section, we complement the previous results by distinguishing the impact of full and partial democratic transitions. We then interact transition dummies with a series of variables that may condition the effect of transitions. We finally, use separately the eleven sub-indices that make the ICRG index to assess the impact of democratic transitions on individual dimensions of the institutional framework.

6.1. Full versus partial democratic transitions

So far, the definition of democratic transitions pools together all moves from a negative to a positive PolityIV index or any improvement in the Freedom House index. A country would thus be coded as having undergone a transition even if its PolityIV score is only marginally positive or if Freedom House classifies it as "partly free". Those countries are more democratic than before, but cannot be considered as democracies. One may suspect that the evolution of institutional outcomes in those countries differ from the evolution of institutional outcomes in countries that have become fully democratic.

To deal with that issue, we again followed Papaioannou and Siourounis (2008), and coded as partial democratic transitions those resulting in the Freedom House index remaining "partly free" or the PolityIV index remaining below 7 points. By contrast, full democratic transitions are transitions that prompted the Freedom House index to be "free" and the PolityIV index to exceed 7 points. Table A3 in the appendix shows that our dataset contains 13 full and 41 partial transitions. We then coded a series of *Partial* D^j dummy variables and a series of *Full* D^j dummy variables based on partial and full transitions in the same way as D^j dummy variables were so far coded. We then included the two series of dummies in our regressions.

*** Insert Table 9 around here ***

The results of those regressions are reported in Table 9. In that table the first column reports the results of a regression that only includes democratic transition dummies, while the second column also controls for autocratic transitions. The results of the two columns are both qualitatively and quantitatively quite close. In the second regression, the autocratic transition dummy bears a negative sign significant at the five percent level. In both regressions, the adjusted R-squared is around 18 percent, and the F-test signals that all coefficients are not jointly zero.

The results pertaining to full and partial democratizations are also the same across regressions. Firstly, we can see no evidence of anticipation effects for any of the two types of transition. Specifically, the coefficients of *Partial* D^1, *Partial* D^2, *Full* D^1, and *Full* D^2 are all statistically insignificant. Secondly, whenever, a D^j variable is statistically significant, it bears a positive sign, signaling that both partial and full transitions result in higher ICRG indexes.

The effect of both partial and full democratic transitions appears entirely in the three years that follow the transition and are of similar magnitude. This is signaled by the coefficients of dummy variables *Partial* D^3 and *Full* D^3, which are both positive and significant at the five-percent level. However, all the other dummy variables capturing post-democratization periods are insignificant at standard levels of statistical significance.

The effects of full and partial democratizations is moreover of a similar magnitude, slightly above one point of the $ICRG_{11}$ index. Full and partial democratic transitions therefore both improve institutional outcomes in a similar way, in terms of both timing and magnitude.

6.2. Conditional effects

We have so far pooled together all countries, and assumed that the effect of transitions was the same everywhere, despite those countries and the context of transitions being potentially quite different. In this section, we therefore consider three variables that may condition the impact of democratic transitions: economic development, education, and the use of force in the transition.

*** Insert Table 10a around here ***

*** Insert Table 10b around here ***

The first variable on which we condition the impact of transitions is GDP per capita. La Porta et al. (1999) for instance argue that economic development itself should create a demand for good government. In turn, it stands to reason that the same demand for good government should be more effective in a democratic country, where officials are elected and civil rights respected. One should therefore expect the effect of democratic transitions on institutional outcomes to be larger in countries with a higher GDP per capita.

We accordingly interacted democratic transition dummies with per capita GDP and including all those variables and their interaction terms in the same regression. The outcome of the estimation including those interaction terms is reported in the first column of Table 10a. However, individual coefficients in models with an interaction term cannot be directly

interpreted.[13] Table 10b therefore reports the marginal effects of D^j variables estimated at the minimum, mean, and maximum values of GDP per capita. The left-hand side panel of Table 10b shows that the marginal effects of dummy variables D^1, D^2, D^4, and D^5 are never statistically significant at standard levels of confidence.

Conversely, the marginal effect of D^3 is positive and significant for some values of GDP per capita. More specifically it is significant at the five-percent level when GDP per capita assumes its minimum or mean values, and turns out statistically insignificant when GDP per capita takes its maximum value. Those results confirm that institutional quality tends to improve in the three years that follow a democratic transition, but suggest that the effect becomes statistically insignificant beyond a certain level of GDP per capita.

Secondly, the impact of democratic transitions may be affected by education. The assumption here is that better educated citizens are more likely to report inappropriate behaviors. The assumption is backed that the recent finding of Botero et al. (2013) who report within-country evidence based on survey data from the World Justice Project. As complaints are likely more dangerous in dictatorships than in democracies, we should expect democratic transitions to unleash more complaints, and the effect to be larger in countries where citizens are more prone to complain. Accordingly, we should expect the impact of democratic transitions to be larger in countries with a more educated population.

We therefore interacted democratic transition dummies with the ratio of total students in secondary education over the population of the relevant age (Barro and Lee, 2013). The results of estimations including that term are reported in the second column of Table 10a. Again, the key finding of that column is the conditional cumulative effect reported in the middle panel of Table 10b. As before, the marginal effects of D^1 and D^2 are statistically insignificant at standard levels of confidence, regardless of the level of secondary education, confirming the absence of anticipation effect. We observe that the marginal effect of D^3 decreases with the level of education. It is positive and significant at the one-percent level when the level of education is below our sample's mean, but becomes statistically insignificant for the largest value of the level of education. Similarly, we find that the marginal effects of D^4 and D^5 decrease with the level of education. They are significant at the five-percent level when the level of education takes its minimum value, but are statistically insignificant at the mean level and beyond.

[13] For discussions of the method and interpretation of models including an interaction term, the interested reader may refer to Brambor et al. (2006).

Finding that the marginal effect of democratic transitions decreases with education, and becomes statistically insignificant in countries with very large levels of education is surprising. However, those results confirm the positive role of democratic transitions on institutional outcomes as well as its timing.

The final parameter on which we condition the impact of transitions is whether the regime change was regular or irregular. We follow Colgan's (2012) definition of irregular transfers, and consider that a transfer is irregular if the individual leader used armed force against his own state at any time prior to coming to office as an integral part of his coming to state leadership, or if mass demonstrations or uprisings were instrumental in deciding the outcome of the transition. We created a dummy variable set to one if the transition was irregular and zero otherwise, and interacted it with democratic transition dummies. Both the transition dummies and their interaction with the irregular transfer dummy were included in the regression.

The outcome of that regression is reported in Column 3 of Table 10a and the implied marginal effects in Table 10b. All interactions terms in Table 10a are positive, suggesting that irregular transfers magnify the impact of democratic transitions on institutional quality. However, Table 10b shows that only the marginal effect of D^3 is statistically significant and only in countries where the transition was irregular. As the sample size is smaller in that regression due to the availability of Colgan's (2012) categorization, those results should be interpreted with caution. However, they are consistent with direction and timing of the effect observed in previous regressions.

6.3. Components of the ICRG index

Although we filtered away the democratic accountability component and used an alternative method of aggregation, the general evolution of the index may still hide differences between specific components. We therefore separately estimated Model 1, using each component of the ICRG index as dependent variable instead of their average. The results of those regressions are reported in Table 11.

*** Insert Table 11 around here ***

Although the adjusted R-squared varies from one regression to the next, all F-tests reject the null hypothesis that all coefficients are jointly zero with a large margin. Moreover, in all the regressions reported in Table 11, the coefficient of the lagged value of institutional

quality is negative and significant at the one-percent level. On the contrary, the dummy variable capturing autocratic transitions is almost never significant at standard levels of confidence. The two exceptions are regressions 11.3 and 11.11, which respectively take the investment profile and socioeconomic conditions as their dependent variables. In both regressions, the autocracy variable exhibits a negative sign, significant at the five-percent level, indicating that autocratic transitions deteriorate a country's investment profile and socioeconomic conditions.

The results concerning the variables of interest in Table 11 are more heterogeneous. One may group the dimensions of the ICRG index in three groups.

The first group features three indices which show no effect of democratic transitions. Those indices are Bureaucratic quality (Column 11.1), Government stability (Column 11.2), and Investment profile (Column 11.3). None of those indices shows signs of anticipation effects, and none shows signs of improvement after the transition. The lack of reaction of those indices to democratic transitions is reminiscent of the arguments that emphasize that some institutions may be deeply rooted and slow moving , like Roland (2004), Tirole (1996), Shleifer and Vishny (1993), Mauro (2004), or Acemoglu and Robinson (2008).

The second group, however, features components of the ICRG index that follow the average trend nearly perfectly: Corruption (Column 11.4), Law and order (Column 11.5), Internal conflict (Column 11.6), and Military in politics (Column 11.7). Specifically, those indices show no sign of anticipation effect, as the coefficients of dummy variables D^1 and D^2 are insignificant at standard levels of significance. Conversely, the coefficient of variable D^3 is positive and significant at the one-percent level for Corruption and Military in politics, and at the five-percent level for Law and order and Internal conflict. All four indices therefore improve in the three years that follow democratic transitions. For the three indices too, the bulk of the effect of democratic transitions appears in that period, as the coefficient of the dummies that capture later periods, D^4 and D^5, are statistically insignificant for Corruption, Law and order, and Internal conflict. The effect seems slightly larger for Military in politics, as D^4 is positive and significant at the five-percent level.

The third group features components of the ICRG index that already evolve before or during the transition: External conflict (Column 11.8), Ethnic tensions (Column 11.9), Religious tensions (Column 11.10), and Socioeconomic conditions (Column 11.11). That group is more heterogeneous. The External conflict sub-index already improves in the period preceding the transition period, captured by D^1, which bears a positive coefficient that is significant at the one-percent level. All subsequent dummy variables, D^2, D^3, D^4 and D^5, are

positive and significant at the one-percent level. In a nutshell, democratic transitions persistently reduce the likelihood an external conflict, and the effect consolidates overtime, in line with the democratic peace hypothesis.

The last three sub-indices seem to deteriorate around the transition. The Ethnic tension sub-index (Column 11.9) deteriorates in the three years that precede transition periods but shows no further sign of deterioration. Specifically, the coefficient of D^1 is negative and significant at the five-percent level, but all the other dummy variables are statistically insignificant at conventional levels. The religious tensions sub-index (Column 11.10) deteriorates in all period but the transition period itself. In other words, the coefficient of variable D^3 is statistically insignificant, but those of D^1, D^2, D^4 and D^5 are all negative and significant at the five-percent level. Finally, we observe that Socioeconomic conditions sub-index (Column 11.11) significantly deteriorates during the transition period, then in the median and long run, as D^2, D^4, and D^5 are negative and statistically significant at the one percent level. Taken together, the evolution of those indices sketch a pattern where tensions build up prior to the transition, before eventually declining thereafter.

To summarize the results of this sub-section, we find that some sub-indices are insensitive to democratic transitions: Bureaucratic quality, Government stability, and Investment profile. However, four sub-indices mimic the behavior of the overall ICRG index: Corruption, Law and order, Internal conflict, and Military in politics. Four indices show signs of evolution before or during the transition. Among those, the External conflict sub-index starts improving before transitions, and keeps improving thereafter, while the Ethnic tension Religious tensions, and Socioeconomic conditions sub-indices deteriorate.

7. Concluding remarks

In this paper, we have studied the impact of democratic and undemocratic transitions using an event-study method. We observe that democratic transitions are on average followed by an improvement of institutional outcomes. Our estimates suggest that the bulk of the improvement occurs during the three years following the transition. We can find no anticipation effect in average institutional outcomes.

The results are robust to using alternative definitions of transitions, to coding pre- and post-transition years in various ways, to changing the set of control variables, to excluding former socialist countries from the sample, and to dealing with endogeneity with IV regressions.

We distinguished full and partial democratic transitions, and found that both improve institutional outcomes. However, full democratic transitions have an effect that lasts longer and eventually becomes larger than partial democratic transitions. We also found that the effect of democratic transitions is conditional on GDP per capita, education, and the regularity of the transition.

When looking at specific components of institutional quality, we find that Bureaucratic quality, Government stability, and Investment profile are insensitive to democratic transitions. Corruption, Law and order, Internal conflict, and Military in politics mimic the behavior of the overall ICRG index. The External conflict sub-index starts improving before transitions, and keeps improving thereafter, while the Ethnic tension Religious tension, and Socioeconomic conditions sub-indices deteriorate.

The results of the present paper uncover one channel through which democratic transitions increase growth. We do not claim that it is the only one. In addition, the impact of democratic transitions on institutional outcomes can only be the first in a series of links that will result in growth-friendly policies leading to better economic outcomes. Uncovering those links is food for future research.

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Appendix

*** Insert Table A1 around here ***

*** Insert Table A2 around here ***

*** Insert Table A3 around here ***

*** Insert Table A4 around here ***

Tables

Table 1: Comparison of the $ICRG_{11}$ index around transitions with the $ICRG_{11}$ index in the transition year (paired t-tests)

	T-5	T-4	T-3	T-2	T-1	T	T+1	T+2	T+3	T+4	T+5	T+6	T+7	T+8
Mean	-2.29	-2.41	-2.51	-2.19	-2.96	-1.56	0.28	0.46	1.39	2.38	2.92	2.27	2.16	2.06
Obs.	39	40	41	41	45	45	45	45	45	45	43	43	42	38
t	-0.57	-0.66	-0.73	-0.72	-2.68		3.26	3.05	3.58	4.34	4.50	3.21	3.19	3.26
					**		***	***	***	***	***	***	***	***

Average $ICRG_{11}$ index minus the world average.
H0: mean difference = 0. *** significant at 1%, ** significant at 5%, * significant at 10%.

Table 2: Impact of democratic transitions on overall institutional quality: baseline results

Dependent variable	$ICRG_{11}$		Principal component	
	(2.1)	(2.2)	(2.3)	(2.4)
$Institutions_{t-1}$	-0.158	-0.158	-0.145	-0.144
	(13.81)***	(13.747) ***	(12.989) ***	(12.921) ***
D^1	-0.364	-0.371	-0.592	-0.601
	(0.948)	(0.967)	(1.243)	(1.263)
D^2	-0.042	-0.056	0.009	-0.008
	(0.084)	(0.11)	(0.014)	(0.013)
D^3	1.043	1.023	1.459	1.433
	(2.7) ***	(2.649) ***	(3.024) ***	(2.973) ***
D^4	0.212	0.184	0.283	0.247
	(0.563)	(0.49)	(0.614)	(0.537)
D^5	0.078	0.035	0.078	0.023
	(0.223)	(0.1)	(0.182)	(0.054)
A		-1.785		-2.244
		(2.17) **		(2.148) **
Country fixed effects	yes	yes	yes	yes
Time fixed effects	yes	yes	yes	yes
Number of observations	3570	3570	3570	3570
Number of Countries	135	135	135	135
Adjusted R-squared	0.181	0.182	0.185	0.186
F (zero slopes), P-value	0.00	0.00	0.00	0.00

Standard errors are heteroscedastic-consistent and clustered at the country level. Absolute t-statistics are in parentheses. *** significant at 1%, ** significant at 5%, * significant at 10%.

Table 3: Impact of democratic transitions on overall institutional quality: Alternative definitions of democratic transitions.
Dependent variable: $ICRG_{11}$.

	PolityIV	Freedom House	Acemoglu et al. (2015)
	(3.1)	(3.2)	(3.4)
$Institutions_{t-1}$	-0.158	-0.158	-0.158
	(13.815) ***	(14.072) ***	(13.789) ***
D^1	-0.674	0.053	-0.741
	(1.046)	(0.195)	(1.122)
D^2	-0.14	0.178	-0.495
	(0.298)	(0.528)	(1.095)
D^3	0.662	0.535	0.781
	(1.692) *	(2.069) **	(2.269) **
D^4	0.256	0.274	0.214
	(0.747)	(1.275)	(0.678)
D^5	0.007	0.405	-0.065
	(0.022)	(1.544)	(0.225)
A	-1.347	-0.689	-0.227
	(1.937) *	(2.728) ***	(0.482)
Country fixed effects	yes	yes	yes
Year fixed effects	yes	yes	yes
Number of observations	3660	3660	3660
Number of Countries	135	135	135
Adjusted R-squared	0.177	0.176	0.178
F (zero slopes), P-value	0.00	0.00	0.00

Standard errors are heteroscedastic-consistent and clustered at the country level. Absolute t-statistics are in parentheses. *** significant at 1%, ** significant at 5%, * significant at 10%.

Table 4: Impact of democratic transitions on overall institutional quality: After vs. before the transition

Dependent variable: $ICRG_{11}$.

	(4.1)	(4.2)
$Institutions_{t-1}$	-0.160	-0.156
	(13.980) ***	(13.922) ***
D^{Total}	0.534	0.510
	(2.166) **	(2.065) **
A		-1.70433
		(2.077) **
Country fixed effects	yes	yes
Time fixed effects	yes	yes
Number of observations	3570	3570
Number of Countries	135	135
Adjusted R-squared	0.179	0.180
F (zero slopes), P-value	0.00	0.00

Standard errors are heteroscedastic-consistent and clustered at the country level. Absolute t-statistics are in parentheses. *** significant at 1%, ** significant at 5%, * significant at 10%.

Table 5: Impact of democratic transitions on overall institutional quality: Alternative definitions of democratic transitions dummy variables.
Dependent variable: $ICRG_{11}$.

	(5.1)	(5.2)
$Institutions_{t-1}$	-0.157	-0.156
	(13.614) ***	(13.552) ***
Democratic transition year-5	-0.088	-0.089
	(0.166)	(0.168)
Democratic transition year-4	-0.493	-0.496
	(1.011)	(1.018)
Democratic transition year-3	-0.899	-0.903
	(1.612)	(1.62)
Democratic transition year-2	-0.399	-0.404
	(0.506)	(0.513)
Democratic transition year-1	-0.719	-0.728
	(0.773)	(0.782)
Democratic transition year	0.416	0.405
	(0.743)	(0.725)
Democratic transition year+1	1.702	1.69
	(2.632) ***	(2.613) ***
Democratic transition year+2	0.148	0.132
	(0.286)	(0.256)
Democratic transition year+3	1.009	0.991
	(1.89) *	(1.858) *
Democratic transition year+4	0.961	0.94
	(2.126) **	(2.079) **
Democratic transition year+5	-0.094	-0.116
	(0.188)	(0.233)
Democratic transition year+6	-1.047	-1.071
	(1.559)	(1.502)
D^5	-0.112	-0.149
	(0.344)	(0.46)
A		-1.804
		(2.194) **
Country fixed effects	yes	yes
Year fixed effects	yes	yes
Number of observations	3565	3565
Number of Countries	135	135
Adjusted R-squared	0.183	0.184
F (zero slopes), P-value	0.00	0.00

Standard errors are heteroscedastic-consistent and clustered at the country level. Absolute t-statistics are in parentheses.
*** significant at 1%, ** significant at 5%, * significant at 10%.

Table 6: Impact of democratic transitions on overall institutional quality: Additional control variables.
Dependent variable: $ICRG_{11}$.

	(6.1)	(6.2)	(6.3)	(6.4)	(6.5)
$Institutions_{t-1}$	-0.17	-0.083	-0.086	-0.09	-0.092
	(14.058) ***	(10.623) ***	(10.594) ***	(10.703) ***	(10.68) ***
D^1	-0.567	-0.253	-0.249	-0.194	-0.183
	(1.38)	(0.88)	(0.854)	(0.667)	(0.626)
D^2	-0.104	0.208	0.153	0.242	0.202
	(0.205)	(0.48)	(0.341)	(0.557)	(0.455)
D^3	0.844	1.04	0.981	1.065	1.025
	(2.055) **	(3.899) ***	(3.422) ***	(3.792) ***	(3.487) ***
D^4	-0.247	-0.167	-0.232	-0.13	-0.188
	(0.585)	(0.624)	(0.806)	(0.475)	(0.646)
D^5	-0.178	-0.022	0.01	-0.017	0.037
	(0.448)	(0.173)	(0.068)	(0.116)	(0.251)
A	-0.426	-0.338	-0.293	0.096	0.062
	(0.463)	(0.736)	(0.634)	(0.195)	(0.127)
GDP per capita	0.001	0.001	0.001	0.001	0.001
	(1.996) **	(6.758) ***	(6.406) ***	(5.785) ***	(5.461) ***
Openness	0.126	0.522	0.562	0.468	0.496
	(0.185)	(2.902) ***	(2.939) ***	(2.512) **	(2.444) **
Secondary enrolment	0.013	0.009	0.008	0.009	0.009
	(1.225)	(2.775) ***	(1.928) *	(2.096) **	(2.022) **
Government size	-5.881	0.683	0.25	-0.392	-1.203
	(2.709) ***	(0.562)	(0.189)	(0.305)	(0.878)
Press freedom	0.252	0.288	0.297	0.336	0.348
	(1.599)	(3.508) ***	(3.423) ***	(3.671) ***	(3.709) ***
British legal origin			-0.423		-0.416
			(1.984) *		(1.647) *
French legal origin			-0.387		-0.658
			(1.812) *		(2.873) ***
Socialist legal origin			-0.25		-0.23
			(0.891)		(0.525)
German legal origin			-0.277		-0.393
			(1.021)		(1.378)
East Asia Pacific				0.165	-0.046
				(0.762)	(0.167)
Europe and Central Asia				-0.601	-0.601
				(0.769)	(0.769)
Middle East North Africa				0.394	0.44
				(1.73)	(1.867) *
South Asia				-0.853	-1.069
				(2.335)	(2.67) ***
Western Europe				0.252	0.063
				(1.003)	(0.225)
North America				0.203	0.043
				(0.521)	(0.102)
Sub-Saharan Africa				-0.191	-0.262
				(1.003)	(1.304)
Transition economies				0.689	0.304
				(0.868)	(0.35)
Country fixed effects	yes	no	no	no	no
Time fixed effects	yes	yes	yes	yes	yes
Number of observations	2753	2753	2638	2722	2638
Number of Countries	135	135	135	135	135
Adjusted R-squared	0.179	0.168	0.163	0.171	0.166
F (zero slopes), P-value	0.00	0.00	0.00	0.00	0.00

Standard errors are heteroscedastic-consistent and clustered at the country level. Absolute t-statistics are in parentheses. *** significant at 1%, ** significant at 5%, * significant at 10%.

Table 7: Impact of democratic transitions on overall institutional quality: Dropping transition economies, $ICRG_{11}$

Dependent variable	Without Transition economies	
	(7.1)	(7.2)
$Institutions_{t-1}$	-0.153	-0.152
	(12.852) ***	(12.784) ***
D^1	-0.509	-0.517
	(1.345)	(1.367)
D^2	0.182	0.167
	(0.347)	(0.319)
D^3	1.057	1.033
	(2.655) ***	(2.599) ***
D^4	0.311	0.282
	(0.836)	(0.757)
D^5	-0.055	-0.101
	(0.162)	(0.3)
A		-1.812
		(2.219) **
Country fixed effects	yes	yes
Time fixed effects	yes	yes
Number of observations	3156	3156
Number of Countries	135	135
Adjusted R-squared	0.171	0.172
F (zero slopes), P-value	0.00	0.00

Standard errors are heteroscedastic-consistent and clustered at the country level. Absolute t-statistics are in parentheses. *** significant at 1%, ** significant at 5%, * significant at 10%.

Table 8: Impact of democratic transitions on overall institutional quality: IV estimates
Dependent variable: $ICRG_{11}$.

	(8.1)	(8.2)	(8.3)	(8.4)
$Institutions_{t-1}$	-0.159	-0.158	-0.157	-0.157
	(19.296) ***	(19.267) ***	(19.033) ***	(18.992) ***
D^{Total}	0.509	0.528		
	(2.712) ***	(2.810) ***		
D^1			1.804	1.782
			(1.313)	(1.298)
D^2			-0.069	-0.047
			(0.230)	(0.159)
D^3			0.859	0.889
			(2.201) **	(2.280) **
D^4			-0.122	-0.120
			(0.382)	(0.377)
D^5			0.766	0.773
			(2.090) **	(2.113) **
A		-1.896		-2.071
		(2.405) **		(2.627) ***
Country fixed effects	yes	yes	yes	yes
Year fixed effects	yes	yes	yes	yes
Number of observations	3522	3522	3516	3516
Number of Countries	135	135	135	135
First Stage F	107.55	107.55	33.76	33.76
Test of over-id. rest., P-value	0.11	0.11	0.23	0.24

Standard errors are heteroscedastic-consistent and clustered at the country level. Absolute t-statistics are in parentheses. *** significant at 1%, ** significant at 5%, * significant at 10%.

Table 9: Impact of full vs. partial democratic transitions on overall institutional quality
Dependent variable: $ICRG_{11}$.

	(9.1)	(9.2)
$Institutions_{t-1}$	-0.159	-0.158
	(13.801) ***	(13.738) ***
Partial D^1	-0.828	-0.828
	(1.16)	(1.155)
Partial D^2	0.206	0.186
	(0.203)	(0.183)
Partial D^3	1.159	1.134
	(2.274) **	(2.228) **
Partial D^4	0.488	0.457
	(1.01)	(0.945)
Partial D^5	0.321	0.273
	(0.789)	(0.669)
Full D^1	-0.339	-0.346
	(0.859)	(0.879)
Full D^2	-0.029	-0.042
	(0.054)	(0.079)
Full D^3	1.055	1.035
	(2.477) **	(2.431) **
Full D^4	0.134	0.107
	(0.316)	(0.252)
Full D^5	0.01	-0.03
	(0.029)	(0.084)
A		-1.778
		(2.16) **
Country fixed effects	yes	yes
Time fixed effects	yes	yes
Number of observations	3570	3570
Number of Countries	135	135
Adjusted R-squared	0.180	0.181
F (zero slopes), P-value	0.00	0.00

Standard errors are heteroscedastic-consistent and clustered at the country level. Absolute t-statistics are in parentheses. *** significant at 1%, ** significant at 5%, * significant at 10%.

Table 10a: Conditional impact of democratic transitions on overall institutional quality: Coefficients

Dependent variable: ICRG11.

Interaction with	GDP per capita	Secondary schooling	Irregular transfer
	(10a.1)	(10b.2)	(10c.3)
$Institutions_{t-1}$	-0.157	-0.162	-0.165
	(13.656) ***	(13.449) ***	(12.384) ***
D^1	-0.722	0.721	-0.743
	(1.393)	(1.279)	(1.589)
D^2	0.089	0.769	-0.563
	(0.122)	(0.975)	(0.855)
D^3	1.286	2.291	0.399
	(2.298) **	(3.809) ***	(0.812)
D^4	0.217	1.237	-0.59
	(0.466)	(2.135) **	(1.172)
D^5	0.079	0.974	-0.764
	(0.21)	(2.014) **	(1.619)
D^1 * interaction	-0.001	-0.071	0.423
	(0.713)	(1.945) *	(0.576)
D^2 * interaction	-0.001	-0.065	0.911
	(0.437)	(1.519)	(0.778)
D^3 * interaction	-0.001	-0.067	1.017
	(0.711)	(2.875) ***	(1.269)
D^4 * interaction	-0.001	-0.061	1.407
	(0.295)	(2.286) **	(1.37)
D^5 * interaction	-0.001	-0.044	0.638
	(0.402)	(2.395) **	(1.000)
A	-1.086	-1.75	-1.561
	(1.301)	(2.134) **	(1.084)
GDP per capita	0.001		
	(0.907)		
Secondary schooling		0.037	
		(2.09) **	
Use of force			-0.578
			(1.499)
Country fixed effects	yes	yes	yes
Time fixed effects	yes	yes	yes
Number of observations	3287	3170	2179
Number of Countries	135	135	135
Adjusted R-squared	0.179	0.181	0.159
F (zero slopes), P-value	0.00	0.00	0.00

Standard errors are heteroscedastic-consistent and clustered at the country level. Absolute t-statistics are in parentheses. *** significant at 1%, ** significant at 5%, * significant at 10%.

Table 10b: Conditional impact of democratic transitions on overall institutional quality: Marginal effects

Dependent variable: ICRG11.

	(10b.1)			(10b.2)			(10b.3)	
	GDP per capita			Secondary schooling			Irregular transfer	
Marginal impact at	Min.	Mean	Max.	Min.	Mean	Max.	No	Yes
D^1	-0.699	-0.465	0.187	0.719	-0.127	-1.898	-0.743	-0.32
	(1.40)	(1.17)	(0.18)	(1.28)	(0.3)	(1.59)	(1.59)	(0.49)
D^2	0.072	-0.097	-0.57	0.767	-0.01	-1.637	-0.563	0.348
	(0.10)	(0.18)	(0.51)	(0.97)	(0.02)	(1.41)	(0.85)	(0.33)
D^3	1.266	1.065	0.505	2.289	1.491	-0.178	0.399	1.416
	(2.34)	(2.56)	(0.61)	(3.81)	(3.27)	(0.29)	(0.81)	(1.91)
	**	**		***	***			*
D^4	0.21	0.142	-0.049	1.235	0.51	-1.008	-0.59	0.817
	(0.46)	(0.37)	(0.07)	(2.13)	(1.16)	(1.36)	(1.17)	(0.88)
				**				
D^5	0.074	0.021	-0.125	0.973	0.452	-0.639	-0.764	-0.126
	(0.2)	(0.06)	(0.24)	(2.01)	(1.14)	(1.16)	(1.62)	(0.18)
				**				

Standard errors are heteroscedastic-consistent and clustered at the country level. Absolute t-statistics are in parentheses. *** significant at 1%, ** significant at 5%, * significant at 10%.

Table 11: Impact of democratic transitions on the components of the ICRG index.

	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	11.10	11.11
Dependent variable	Bureau. quality	Gov. stability	Investment profile	Corruption	Law and order	Internal conflict	Military in politics	External conflict	Ethnic tensions	Religious tensions	Socioecon. conditions
$Institutions_{t-1}$	-0.097	-0.300	-0.196	-0.151	-0.136	-0.170	-0.13	-0.186	-0.135	-0.108	-0.17
	(10.65)***	(22.07)***	(14.52)***	(11.87)***	(12.15)***	(14.29)***	(10.28)***	(14.74)***	(11.82)***	(10.45)***	(15.85)***
D^1	-0.025	0.104	-0.08	-0.008	-0.056	-0.118	0.027	0.211	-0.148	-0.069	-0.11
	(0.92)	(0.92)	(0.81)	(0.17)	(1.15)	(1.12)	(0.51)	(1.84)*	(2.28)**	(2.09)**	(1.29)
D^2	0.004	-0.056	-0.173	0.015	-0.006	0.117	0.057	0.423	0.032	-0.094	-0.291
	(0.10)	(0.46)	(1.48)	(0.30)	(0.12)	(0.88)	(1.06)	(3.68)***	(0.53)	(2.37)**	(2.80)***
D^3	0.029	-0.021	0.102	0.154	0.096	0.265	0.158	0.434	0.017	-0.035	-0.102
	(1.01)	(0.19)	(1.08)	(3.14)***	(2.21)**	(2.43)**	(2.83)***	(4.74)***	(0.36)	(1.1)	(1.13)
D^4	0.005	0.08	-0.064	0.058	0.024	0.097	0.094	0.409	0.021	-0.064	-0.351
	(0.18)	(0.7)	(0.62)	(1.18)	(0.59)	(0.98)	(2.08)**	(4.46)***	(0.45)	(2.16)**	(3.94)***
D^5	0.021	0.052	-0.005	-0.009	-0.013	0.11	0.066	0.298	-0.027	-0.067	-0.283
	(0.91)	(0.5)	(0.06)	(0.23)	(0.35)	(1.2)	(1.51)	(3.62)***	(0.60)	(2.18)**	(3.49)***
A	-0.08	-0.137	-0.43	-0.078	-0.019	-0.143	-0.286	-0.091	-0.05	0.014	-0.48
	(1.09)	(0.53)	(2.10)**	(1.23)	(0.19)	(0.80)	(1.60)	(0.38)	(0.46)	(0.18)	(2.53)**
Number of observations	3570	3570	3570	3570	3570	3570	3570	3570	3570	3570	3570
Number of Countries	135	135	135	135	135	135	135	135	135	135	135
Adjusted R-squared	0.070	0.267	0.225	0.118	0.180	0.178	0.070	0.172	0.139	0.100	0.110
F (zero slopes), P-value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Standard errors are heteroscedastic-consistent and clustered at the country level. Absolute t-statistics are in parentheses. *** significant at 1%, ** significant at 5%, * significant at 10%.

Table A1: Descriptive statistics

	Mean	Std. Dev	Minimum	Maximum
$ICRG_{11}$	61.85	14.52	13.25	91.00
Principal component	63.16	110.78	0.98	101.16
Bureaucracy quality	2.148	1.195	0.000	4.000
Corruption	3.027	1.373	0.000	6.167
Ethnic tensions	3.958	1.456	0.000	6
External conflict	10.667	2.164	0.000	12
Government stability	7.687	2.227	0.667	12
Internal conflict	8.817	2.610	0	12
Investment profile	7.190	2.565	0	12
Law and order	3.693	1.490	0	6
Military in politics	3.735	1.846	0	6.167
Religious tensions	4.573	1.349	0	6
Socioeconomic conditions	5.640	2.289	0	11
GDP per capita	12840.28	13928.57	262.41	74021.45
Openness	0.40	0.28	0.06	2.22
Secondary enrolment	34.43	16.75	1.89	76.11
Government size	0.15	0.06	0.03	0.43

Table A2: Transition dummy variables

Variable	Number
D^1	69
D^2	80
D^3	82
D^4	80
D^5	267
A	41

Table A3: Democratic and autocratic transitions

Country	Date of switch to democracy	Date of switch to autocracy
Albania	1992	None
Algeria	None	None
Angola	None	None
Argentina	None	None
Armenia	None	None
Australia	None	None
Austria	None	None
Azerbaijan	None	None
Bahamas	None	None
Bahrain	None	None
Bangladesh	1991	None
Belarus	None	None
Belgium	None	None
Bolivia	None	None
Botswana	None	None
Brazil	1985	None
Brunei	None	None
Bulgaria	1991 [F]	None
Burkina Faso	None	None
Cameroon	None	None
Canada	None	None
Chile	1990 [F]	None
China,P.R.: Mainland	None	None
China,P.R.:Hong Kong	None	None
Colombia	None	None
Congo, Dem. Rep. Of	None	None
Costa Rica	None	None
Côte d'Ivoire	None	None
Croatia	2000 [F]	None
Cuba	None	None
Cyprus	None	None
Czech Rep.	1993 [F]	None
Denmark	None	None
Dom. Rep.	None	None
Ecuador	None	None
Egypt	None	None
El Salvador	1994	None
Estonia	None	None
Ethiopia	1995	None
Finland	None	None
France	None	None
Gabon	None	None
Gambia	None	1994
Germany	None	None

Ghana	1996	None
Greece	None	None
Guatemala	1996	None
Guinea	None	None
Guinea-Bissau	2005	None
Guyana	1992	None
Haiti	None	None
Honduras	None	None
Hungary	1990 [F]	None
Iceland	None	None
Indonesia	1999; 2005 [F]	None
Iran	None	None
Iraq	None	None
Ireland	None	None
Israel	None	None
Italy	None	None
Jamaica	None	None
Japan	None	None
Jordan	None	None
Kazakhstan	None	None
Kenya	None	None
Korea	1988	None
Korea, Dem. Rep.	None	None
Kuwait	None	None
Latvia	None	None
Lebanon	2005	None
Liberia	2006	None
Libya	None	None
Lithuania	1993 [F]	None
Luxembourg	None	None
Madagascar	1993	None
Malawi	1994	None
Malaysia	None	None
Mali	1992	None
Malta	None	None
Mexico	1997	None
Moldova	None	None
Mongolia	1992 [F]	None
Montenegro	None	None
Morocco	None	None
Mozambique	1994	None
Myanmar	None	None
Namibia	None	None
Netherlands	None	None
New Zealand	None	None
Nicaragua	1990	None
Niger	None	None
Nigeria	1999	None
Norway	None	None

Oman	None	None
Panama	1994 [F]	None
Papua New Guinea	None	None
Paraguay	1993	None
Philippines	1987 [F]	None
Poland	1990	None
Portugal	None	None
Qatar	None	None
Romania	1990	None
Russia	1993	None
Saudi Arabia	None	None
Senegal	2000	None
Serbia	2000	None
Sierra Leone	None	None
Singapore	None	None
Slovakia	1993	None
Slovenia	1992 [F]	None
Somalia	None	None
South Africa	1994 [F]	None
Spain	None	None
Sudan	None	None
Suriname	1991	None
Sweden	None	None
Switzerland	None	None
Syria	None	None
Taiwan	None	None
Tanzania	1995	None
Thailand	1992; 2008	None
Togo	None	None
Trinidad-Tobago	None	None
Tunisia	None	None
Uganda	None	None
Ukraine	2005	None
United Arab Emirates	None	None
United Kingdom	None	None
United States	None	None
Uruguay	1985 [F]	None
Venezuela	None	None
Vietnam	None	None
Yemen, Republic Of	None	None
Zambia	1991	None
Zimbabwe	None	None

F: Full transition.

Table A4: Principal components analysis: Factor loadings of the eleven sub-indices of the ICRG index

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11
Government stability	0.51	0.69	0.27	0.06	0.13	0.37	0.00	0.07	0.02	0.19	0.01
Socioeconomic conditions	0.74	-0.23	0.38	-0.12	0.10	-0.28	-0.31	-0.10	-0.05	0.22	0.03
Investment profile	0.69	0.33	0.46	-0.29	0.04	-0.12	0.01	0.10	-0.12	-0.29	0.00
Internal conflict	0.84	0.21	-0.21	0.13	-0.09	-0.07	0.05	-0.27	-0.07	-0.01	-0.31
External conflict	0.65	0.26	-0.33	-0.02	-0.58	-0.06	-0.18	0.12	0.02	0.02	0.10
Corruption	0.68	-0.53	-0.03	0.17	0.01	0.34	-0.13	0.17	-0.24	-0.05	-0.05
Military in politics	0.81	-0.20	0.04	-0.11	-0.10	-0.11	0.47	0.07	-0.10	0.16	0.08
Religious tensions	0.51	-0.04	-0.58	-0.56	0.25	0.14	-0.05	-0.05	0.05	0.01	0.01
Law and order	0.85	-0.06	0.00	0.24	0.06	0.12	0.02	-0.33	0.06	-0.13	0.25
Ethnic tensions	0.65	0.19	-0.38	0.35	0.37	-0.29	-0.02	0.24	0.03	-0.02	0.03
Bureaucratic quality	0.80	-0.34	0.24	-0.01	-0.07	0.07	0.03	0.12	0.39	-0.04	-0.11
Cumulative R-Squared	0.51	0.62	0.72	0.78	0.83	0.88	0.91	0.94	0.96	0.98	1.00