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Distrust and Political Turnover during Economic Crises
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ABSTRACT

We use a six-decade long annual country-level panel dataset to document that recessions are more likely to cause political turnover in countries with lower levels of generalized trust. The effect is only present in democracies (not autocracies), for turnovers occurring through regular procedures (not coups), and during scheduled election years. We find similar effects for vote shares in national elections across sub-national regions within Europe and across counties within the United States. Furthermore, countries with higher trust experience more rapid recoveries from recessions. The results show that trust is an important determinant of political stability during recessions.

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1 Introduction

All economies suffer from macroeconomic shocks. One commonly observed phenomenon during such crises is political instability, which has important consequences. The degree of instability can vary widely from country to country. For example, from 1980–2000, Italy and Sweden both experienced a similarly low average growth rate of approximately 0.03%. Italy experienced a turnover rate for the prime minister of 66.7%, while Sweden experienced a much more moderate turnover rate of 23.8%.[1] While there could be many causes for this difference, we posit that one important factor is generalized trust (the extent to which people believe that others can be trusted), which is much lower in Italy than in Sweden. The potential importance of trust is consistent with the perceived tone of the public rhetoric. In low-trust contexts, public figures and citizens often blame political leaders. In high-trust countries, rhetoric seems to focus on cooperation with the government to achieve recovery.[2]

Motivated by these observations, this study hypothesizes that during times of economic crises, trust plays a critical role in determining political stability. Specifically, we hypothesize that generalized trust affects how citizens evaluate their government's performance in the face of severe economic downturns. In societies where trust is low, citizens may be less likely to trust the excuses of leaders and more likely to blame poor economic performance on bad policy than bad luck. In contrast, in societies where trust is high, citizens may be more likely to trust leaders when they argue that the poor economic performance is outside of their control and, in order to achieve economic recovery, work together and preserve political stability.

In the paper, we provide a number of examples that suggest recessions are more likely to lead to turnover in countries with lower levels of trust. However, case studies cannot be conclusive for several reasons. First, they are not representative, and the average relationship between trust and political turnover during recessions can be quite different from isolated examples. Second, countries with different levels of trust may also differ in other ways that could influence electoral turnover during recessions. For example, high-trust countries are richer on average. Thus, policies that voters care about, such as public goods provision, may be less vulnerable to transitory economic downturns. Similarly, recessions may coincide with other events, such as military conflict, that can affect political turnover differentially across high and low trust countries.

[1] This difference is not due to systematically shorter term-lengths in Italy. From 1980–2000, Italy's prime minister did not have directly set term-lengths, but had to retain support of the Chamber of Deputies, whose members had five-year terms. Sweden's prime minister did not have directly set term-lengths either, but had to retain support of the Riksdag, whose members had four year terms.

[2] We provide detailed examples in Section 2.1.

This paper addresses these difficulties to provide rigorous and systematic evidence of how trust affects the relationship between economic downturns and political turnover. We use several publicly available datasets to construct an annual panel of countries from 1951–2014. The dependent variable of interest is whether the head of the government is replaced in a given year and country. The main explanatory variable of interest is the interaction between the occurrence of an economic recession in a given year and country and the average level of trust in that country. Given that trust is a slow-moving cultural trait, we measure it as a time-invariant country-level variable. A negative coefficient for the interaction term implies that recessions lead to fewer political turnovers in countries with higher levels of trust.

The baseline specification includes country fixed effects to account for time-invariant differences across countries, and year fixed effects to account for changes over time that influence all countries equally. The two main concerns with the simple fixed effects specification is that trust and/or the occurrence of a recession may be correlated with other factors that could influence turnover. For example, voters in countries with higher trust may have higher educational attainment, which has been found to affect how a voter interprets the politician's effort based on policy outcomes (Larreguy and Marshall, 2017). Similarly, recessions may coincide with other events, such as civil conflicts, that can also reduce political stability. To address such concerns, the baseline specification controls for covariates that vary at the country and/or year level and are potentially correlated with a country's level of trust, the occurrence of a recession, and political turnover. The covariates include characteristics of the incumbent leader, the level of democracy, income, and the occurrence of armed civil conflict. We control for lagged measures to avoid endogeneity, and interact each control with trust and with the occurrence of a recession. This extensive set of interacted controls makes it unlikely that our baseline estimates are confounded by omitted factors correlated with either trust or the presence of recession. We present a large number of robustness checks after the main results.

Our main analysis focuses on democracies, where citizens have more direct influence over turnover.[3] We find that when economic growth is low, high-trust countries are much less likely to experience leader turnover than low-–trust ones. For example, the presence of a recession (defined as GDP growth below the tenth percentile) is 43.6 percentage-points more likely to cause political turnover in Greece than in Denmark. Similarly, it is 31.5 percentage-points more likely to cause turnover in Italy than in Norway. These effects are economically

[3]In autocracies, dissatisfied citizens can invoke leader turnover with a revolution, but the relationship between revolutions and recessions should be less elastic than that between elections (voting the incumbent out of office) and recessions (Klick, 2005; Acemoglu and Robinson, 2005).

significant, especially when compared to the mean turnover rate in the sample, which is 24 percentage-points. These findings are consistent with our hypothesis that citizens from low-trust countries are more likely to vote leaders out of office than those from high-trust countries.

The underlying mechanism in our preferred interpretation is electoral accountability.[4] To provide evidence for this mechanism, we investigate whether the estimates attenuate in contexts where accountability is weak and turnover is less responsive to citizen preferences. The first setting that we examine is autocracies, where there is no systematic voting. The interaction effect is statistically zero in this context. Next, we estimate a multinomial logit using all countries and show that recessions increase turnover in lower trust countries that result from regular processes (e.g., elections) and not from irregular processes. Third, within democracies, we compare the effects during election years to non-election years. Our results are only present during election years. These results are all consistent with the interpretation that electoral accountability is the main force behind our estimates.

We present a large body of evidence to support our preferred interpretation of the causal effect of the interaction of trust and recessions on political turnover. We show that the results are robust to accounting for additional potentially relevant covariates, such as regional economic conditions. To address concerns of measurement error, we show that our results are robust to the use of different measures of trust and recessions, and alternative definitions of democracies. See Section 6 for a detailed discussion of these and other robustness exercises.

In addition to the cross-country analysis, we document similar effects for national elections across sub-national regions in Europe and across counties in the United States. These analyses allow us to observe vote shares, which is a more nuanced measure of citizen support for the incumbent than turnover. This continuous variable allows us to detect subtle changes in support from citizens that do not result in turnover. It is also less likely to confound shifts in citizen support for a given candidate with internal party politics.[5] Moreover, the fact that we find similar results within the United States goes against the concern that our other results are confounded by omitted variables in the cross-country setting (e.g., differences in political cultures, electoral institutions, and expectations of economic recovery between high and low trust countries).

The last section of the paper explores the potential importance of our findings with descriptive evidence on the relationship between trust and political turnover and economic recovery

[4] We discuss the conceptual framework in Section 2.2 and provide a simple model in Appendix Section B.

[5] For example, in parliamentary systems, the ruling partly may decide to change the leader of the party in between elections (i.e., without consulting voters).

from recessions. The data show that immediately following a recession, countries with higher levels of trust, which are also those with less leader turnover, experience faster economic growth. Together with the main findings, these correlations suggest that trust, by moderating voters' reactions to economic crises, can play an important role in long-run economic and political stability.

Our study is the first to examine the interaction of economic recessions and trust on political turnover and contributes to two literatures. The first includes studies of the role of trust and related cultural values in determining economic and institutional outcomes, such as income levels (Algan and Cahuc, 2010; Butler, Giuliano, and Guiso, 2016), government regulation (Aghion, Algan, Cahuc, and Shleifer, 2010), financial behavior (Guiso, Sapienza, and Zingales, 2004), international trade and FDI (Guiso, Sapienza, and Zingales, 2009), labor market outcomes (Algan and Cahuc, 2009), health behavior (Alsan and Wanamaker, 2017; Martinez-Bravo and Stegmann, 2017), and political institutions (e.g. Fischer, 1989; Greif, 1994). Our findings suggest that one of the channels through which trust improves growth in the long run (Algan and Cahuc, 2010; Butler, Giuliano, and Guiso, 2016) is by moderating political instability. Conceptualizing trust as resolving problems of asymmetric information is similar to Bloom and Reenen (2007), which documents that corporate structures are more decentralized in countries with higher trust; and Gennaioli, Porta, Lopez-de Silanes, and Shleifer (2020), which provides theoretical and empirical evidence that trust is a critical ingredient in equilibrium insurance contracts. Arguing that pre-existing cultural traits can alter the relationship between economic and political or institutional variables adds to Martinez-Bravo, Padro-i-Miquel, Qian, and Yao (2017) and Martinez-Bravo, Padro-i-Miquel, Qian, Xu, and Yao (2017), which examine the cultural pre-conditions needed for elections to improve public goods in China.

Several recent works document a decline in trust during recessions in the United States (Stevenson and Wolfers, 2011), Russia (Ananyev and Guriev, 2016), and Europe (Algan, Guriev, Papaioannou, and Passari, 2017). Our study complements these earlier works, but is also conceptually different. We exploit variation in a time-invariant measure of trust to capture long-run cultural values which change slowly over time. These earlier studies focus on the more rapidly changing components of trust. The two dimensions of trust are related, both important, but conceptually distinct.[6] We discuss this more in the robustness section.

Second, our results advance our understanding of the relationship between economic per-

[6]There is a substantial component of country-level trust that remains constant in the long run in our data: between-country variance is over three times larger than within-country variance.

formance and re-election, for which the existing empirical evidence is mixed.[7] Our findings indicate that this is partly because the average effects obfuscate underlying heterogeneity between high and low trust countries. In this sense, our work is closely related to Brender and Drazen (2008), which documents that economic growth increases re-election probabilities, but only in less developed economies. We show that if we simultaneously include our explanatory variable of interest as well as theirs in the regression, both results survive. In fact, the variables of interest from their paper become much more economically significant (i.e., larger in magnitude) after accounting for heterogeneity in trust. In this sense, our findings bring forth a new dimension of heterogeneity which future studies on political business cycles need to take into account. More generally, this paper is related to studies of retrospective voting, in which voters punish leaders for adverse economic outcomes (Fiorina, 1978; Fair, 1978; Kramer, 1971; Akhmedov and Zhuravskaya, 2004; Besley, 2006).[8]

The paper is organized as follows. Section 2 discusses case studies and the conceptual framework. Section 3 discusses the empirical strategy. Section 4 describes the data. Section 5 presents the cross-country results. Section 6 presents the robustness checks. Section 7 examines sub-national regions in Europe and the United States. Section 8 presents descriptive evidence on economic recovery. Section 9 concludes.

2 Conceptual Framework

2.1 Case Studies

To illustrate the phenomenon that motivates this study, we provide a few concrete examples that document citizens' propensity to blame leaders for economic problems in lower-trust countries, but are more forgiving of leaders during hard times in high-trust countries.

Brazil, the Philippines, and Turkey have respectively the third, fourth and ninth lowest trust measures in our dataset, out of 95 total countries in the baseline sample. Each of these countries experienced recessions that led to antagonistic political turnovers. During the

[7] For studies which find no effect, see for example, G. Bingham Powell Jr. and Guy D. Whitten (1993), Paldam (1991), Kaare Strøm and Seymour M. Lipset (1984) and Lewis-Beck (1988). For the United States, Ray C. Fair (1978) found a significant effect of growth on voting in presidential elections, as did Alesina and Howard Rosenthal (1995). For studies that find a positive relationship, see for example, (Wolfers, 2007; Leigh, 2009; Cole, Healy, and Werker, 2012). See, also, Healy, Malhotra, and Mo (2010); Bagues and Esteve-Volart (2016); Liberini, Redoano, and Proto (2017); Achen and Bartels (2013). Ashworth, Bueno de Mesquita, and Friedenberg (2017) provides theoretical evidence that the electoral response to exogenous events is consistent with a model of electoral accountability with rational voters.

[8] Powell Jr and Whitten (1993) find that this electoral response varies with the local institutional context. For a detailed discussion of the literature, see Alesina, Roubini, and Cohen (1997) and Persson and Tabellini (2002, Ch. 16).

late 1980s and early 1990s, Brazil suffered severe economic downturns. The media widely reported the unpopularity of then-President Jose Sarney and the fact that he was blamed for the country's economic woes. *The New York Times* reported that "For many Brazilians, Mr. Sarney's biggest failure has been the economy" (Brooke, 1990). Similarly, in the second year of his term, *The Chicago Tribune* noted that "Sarney [is] an easy target for those seeking to assign blame for Brazil's sudden economic decline" (Langfur, 1987).

In the early 2000s, the Philippines experienced poor economic growth and a political turnover when President Joseph Estrada was ousted in favor of Gloria Macapagal Arroyo. *The Economist* reported that "middle-class Filipinos were hoping to avoid an economic catastrophe" (The Economist Editorial Board, 2001). The *BBC* went further to explain how Filipinos blamed the recession on the president: "there has been a growing perception among businessmen that his administration is inept and corrupt. The government failed to use its dominance of Congress to enact crucial economic reforms and presidential cronies began to pop up again everywhere... The opposition believes the economic crisis requires an urgent solution, the immediate resignation of Mr. Estrada" (McLean, 2000).

During Turkey's economic crisis in 2002, *the Economist* echoed the popular opinion that "Mr. Ecevit's [the prime minister] government was fatally weakened by its inept handling of Turkey's economic crisis" (The Economist Editorial Board, 2002). This message was also captured by the *BBC*, which reported that "Mr. Erdogan's success came amid widespread anger at the government, whom many Turks blame for the economic crisis of the past two years" (BBC World News Desk, 2002).

In contrast, consider Sweden and Finland, which have the second- and fourth-highest levels of trust in our sample. Sweden experienced a severe economic downturn (its worst in fifty years) from 1991-1993 and Finland experienced a prolonged downturn that began in 2012.[9] During the Swedish downturn, there were few reports of political unrest, mass accusations against the government, or aggressive calls for political turnover. Instead, media accounts described an environment of relative harmony. An example is the following excerpt, which is from a 1992 Washington Post article.

> "Sweden, which for decades has provided its citizens with cradle-to-grave welfare services, is mired in its deepest recession in 50 years, and economists expect 1992 to be the third consecutive year of falling output... Officials of Prime Minister Carl Bildt's conservative coalition government said they will hold talks through this weekend with the opposition Social Democrats to try to agree on a bipartisan

[9] According to World Bank data, GDP growth was -0.94% from 2012–2014.

> plan of spending cuts to curb the burgeoning budget deficit and revive the troubled Swedish economy. 'We are looking at this to be settled as soon as possible,' said Bildt's spokesman, Lars Christiansson. 'We know how important it is to move quickly, so we are optimistic.' So were many Swedes, even with an interest rate that appears to be financially insane. 'Yes, it is a crazy rate,' said Hubert Fromlet, chief economist with Swedbank. 'But there is a high degree of acceptance among Swedes, because they realize that this is an emergency'" (Swisher, 1992).

These examples illustrate the difference in political response to economic downturns between low- and high-trust countries. Citizens in low-trust countries appear inclined to quickly decry the current leadership, while citizens in higher-trust countries appear more willing to work with the government, or to give more time to politicians in office before concluding that the leader should be ousted. The following empirical analysis examines whether this is a systematic pattern in the data.

2.2 Interpretation

The empirical analysis investigates the relationship between trust, economic downturns and political turnover. We being with a simple model to illustrate one potential mechanism behind this finding. We extend the framework of Ashworth, Bueno de Mesquita, and Friedenberg (2017), which itself builds on Dewatripont, Jewitt, and Tirole (1999) by adding a voting component. We provide a verbal overview of the model here and the formal presentation in the appendix. We will also discuss other possible explanations at the end of this section.

In the model, politicians exert effort, and are either high-ability or low-ability types. Voters are unable to observe effort or ability, but do observe the politician's output. The model assumes that effort and ability are complements in producing output. Thus, when the politician exerts high effort, high-ability politicians are better able to achieve a high level of output. Thus, when voters observe a high level of output, voters have a stronger posterior that they have a high-ability politician, and the same economic shock, δ, is less likely to change their beliefs. We interpret such a situation as a high trust equilibrium. In such cases, posterior beliefs are less sensitive to adverse shocks. In other words, voters "trust" that low output is more likely to be caused by an exogenous shock, ε, than by the politician being a bad type. The interpretation is tautological in that we define any equilibrium in which a voter's behavior is less sensitive to shocks as a "high trust" equilibrium. This interpretation has the additional testable empirical implication that high-trust countries have higher average output and low-trust countries have higher average turnover rates. In the model, for a given

set of parameter values, two situations are possible. One in which the country is in a "high-trust" equilibrium, where politicians are less likely to be voted out of office in the fact of an adverse shock, and one where the country is in a "low-trust" equilibrium, where politicians are more likely to be voted out of office. The main empirically testable prediction from the simple model is that during a recession, politicians are less likely to be voted out of office in high-trust countries because voters are more likely to attribute the poor outcome to exogenous reasons.

One can also rationalize our empirical analysis with traditional models of retrospective voting (Nordhaus, 1975, 1989) or of signaling (Spence, 1974). In these models, politicians are voted out of office during recessions either because voters retrospectively punish politicians or because recessions signal the lower ability of a politician. These theories do not consider trust, but can be extended to do so. For example, if trust affects the extent to which citizens are willing to blame the recessions on their politicians, then they would be less likely to retrospectively vote them out of office. Trust could also affect the weight that citizens place on the signaling value of a recession. These additional mechanisms would complement the simple model discussed above.

In the model discussed above, low trust does not cause inefficient outcomes. Our study is agnostic about whether the effects of distrust that we estimate are well-placed or misplaced. We discuss this more in the conclusion.

3 Empirical Strategy

The goal of our study is to examine whether generalized trust affects the likelihood of political turnover during periods of poor economic performance. Our main estimating equation is:

$$y_{i,t} = \beta\, Trust_i \times Recession_{i,t-1} + \mathbf{X}_{i,t-1}\mathbf{\Gamma} + \alpha_i + \gamma_t + \varepsilon_{i,t}, \tag{1}$$

where i indexes countries and t indexes years. The sample includes all countries and years in which the country is democratic in the previous year. We consider the largest range of years possible given the data limitations, which is 1951-2014. The specification includes country fixed effects α_i and year fixed effects γ_t. The country fixed effects capture time-invariant differences across countries, such as persistent differences in political institutions or corruption. Year fixed effects control for global trends that affect all countries similarly. All standard errors are clustered at the country level to correct for non-independence of observations over time within a country.

Leader turnover in country i at time t is denoted $y_{i,t}$ and is assumed to be a function of the interaction of a time-invariant measure of trust, $Trust_i$, and an indicator variable that equals one if country i experiences poor economic growth between years $t-1$ and t, $Recession_{i,t-1}$. Our baseline measure defines all observations in the bottom ten-percentile of annual GDP growth as a recession.[10] Our hypothesis of interest is whether $\beta < 0$: when there is a recession, countries with higher trust are less likely to experience leader turnover. We always control for the uninteracted recession indicator variable, which varies by time and country (it is included in the vector of controls, $\mathbf{X}_{i,t-1}$). The uninteracted measure of trust is time invariant and is therefore absorbed by country fixed effects.

Since the hypothesized mechanism for turnover is through the electoral process in our baseline regressions, we use a sample of democracies.[11] While we expect our effects to be most pronounced during regularly-scheduled election years, turnovers can, and often do, occur during the middle of a leader's term. Given this, our baseline specification includes all years of a democratic leader's term.

The main challenge for identification of the coefficient of interest, β, is that trust is potentially correlated with other factors that could affect the extent to which recessions lead to political turnover. Or analogously, that the occurrence of recessions is correlated with other country-specific changes that also affect turnover and is moderated by the level of trust in the country. To help address these issues, the baseline specification includes a vector of covariates, all measured in year $t-1$ to help alleviate reverse causality. The vector $\mathbf{X}_{i,t-1}$ includes four characteristics of the leader in power (gender, current age, days in office, and the number of times previously in office), GDP, democratic strength measured by the polity2 score, and an indicator variable for the presence of any conflict or war.[12] In addition to controlling for the direct effect of these covariates on leader turnover, we also allow their effects to differ by a country's level of trust by controlling for each of the measures interacted with trust. We allow the measures to have a differential effect on leader turnover depending on whether the country experienced a recession in year $t-1$ by controlling for each of the measures interacted

[10] We use total GDP, and not per capita GDP, in our baseline measure, as we believe it is more salient for the typical voter. In robustness checks, we explore alternative measure of recessions, including using per capita GDP growth, within-country growth cutoffs, and more. GDP is always measured in real terms in the paper.

[11] We use the coding from Cheibub, Gandhi, and Vreeland (2010), which was updated by Bjørnskov and Rode (2017), who define a democratic state as one that holds elections to select the executive and the legislature, has a closed legislature, legally allows multiple political parties, has multiple parties in practice, has a legislature with multiple parties, has seen a rules-based change in leadership, and whose incumbent leader has not consolidated power in a way that violates the above criteria.

[12] Larreguy and Marshall (2017) find that educated voters are better able to map policy outcomes to politicians' effort. This motivates controlling for average educational attainment of each country. We are unable to do this because of data limitations, and instead control for GDP, which is strongly correlated with average education.

with the recession indicator variable, $Recession_{i,t-1}$.[13]

4 Data

Our measure of leader turnover is computed from version 4.1 of the *Archigos* database (Goemans, Gleditsch, and Chiozza, 2009). The data cover all independent states and their effective leaders. Coverage extends from 1945–2015, and the number of countries in the sample increases over time.[14] The database identifies the effective ruler of each country on a case-by-case basis. It avoids coding ceremonial monarchs in European countries as heads of state. In parliamentary regimes, the prime minister is coded as the ruler; in presidential systems, the president is coded as the ruler. In dual systems, where there is a president and a prime minister, the president is considered the leader. In communist regimes, the ruler is typically coded as the chairman of the party.[15]

The data report the start and end date of office for each leader-spell, the manner in which a leader enters office, and several additional leader characteristics. In our baseline estimates, we include the number of years and terms a leader has previously been in office, the age of the leader upon entering office, and the leader's gender as controls.

Our measure of trust is calculated from responses to generalized trust questions in the *World Values Surveys*, the *European Values Surveys*, and surveys from the *Barometer* series, which include the *Latinobarometer* surveys, the *Asiabarometer* surveys, the *Arabbarometer* surveys, and the *Afrobarometer* surveys. In the *World Values Surveys* and the *European Values Surveys*, the trust question is worded as: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people? [1] Most people can be trusted. [2] Need to be very careful." In the *Barometer* Surveys, the

[13]The controls alter the interpretation of the coefficient for the interaction variable of interest because some of the correlates of trust may be outcomes of trust in the long run. For example, high trust may lead to higher levels of institutional quality, which may then lead to higher levels of trust, generating a positive feedback loop. If we control for the interaction of institutional quality and recession occurrence, we may remove meaningful variation from our interaction of interest. Hence, we face the standard tradeoff between including too few controls, which may be susceptible to problems from omitted variables, and too many controls, which may eliminate some part of the true effect. In practice, this turns out to be not very important. The results are similar regardless of whether we control for interacted or uninteracted controls.

[14]The principal sources of raw data for *Archigos* are www.rulers.org and www.worldstatesmen.org. We corroborate the *Archigos* data with the *Change in Source of Leader Support* (*CHISOLS*) dataset, constructed by Brett Ashley Leeds and Michaela Mattes. *CHISOLS* uses the same definition of a primary leader as the *Archigos* database, and covers the years 1919 to 2015. However, CHISOLS provides less information about each leader. The number of democratic countries in the sample ranges from 23 in 1951 to 70 in 2014. The change in sample size over time is driven by a range of factors including coverage in the *Archigos* and *Penn World Tables* datasets and the number of countries that are defined as democratic in a year.

[15]Goemans, Gleditsch, and Chiozza (2009) discuss the details of each country and exceptions to the usual coding rules for *Archigos*.

question is: "Generally speaking, would you say that you can trust most people, or that you can never be too careful when dealing with others? [1] You can trust most people. [2] You can never be too careful when dealing with others." Countries are surveyed in different years during 1981–2014. For each country, we aggregate all data sources and calculate a time-invariant measure, which is the fraction of respondents from a country that answer that most people can be trusted (i.e., question [1] from each of the survey).[16]

Our measure of real GDP is taken from the *Penn World Tables* (Feenstra, Inklaar, and Timmer, 2015). We measure income using output-side GDP at current PPPs in millions of 2005 U.S. dollars. With these data, we construct an economic downturn indicator variable that equals one if annual growth falls below the 10th percentile of GDP growth observations. The cutoff value is computed using all years and countries for which GDP data are available. In the robustness section, we consider numerous alternative cutoffs.

4.1 Descriptive Statistics

Figure 1 maps the country-level average trust measures. The different shades of blue represent varying levels of trust for countries that are democratic at any point in our sample. The different shades of red represent varying levels of trust for countries that are never democratic in the sample. The map shows no obvious geographic clustering in trust and one observes significant heterogeneity in reported trust levels in our sample, even within geographically proximate countries. In the sample, the country with the highest level of trust is Norway (0.70) and the country with the lowest level of trust is Trinidad and Tobago (0.04).[17]

Figure 2 reports the distribution of recessions over time by plotting the share of countries in the sample that are experiencing a recession in each year of the analysis. It shows that there is a lot of variation over time. Thus, it is unlikely that our estimates are driven by one particular recession.

If we compare the three European countries in our sample with the lowest levels of trust (Portugal, France, and Greece) to the three with the highest levels of trust (Denmark, Sweden,

[16] In the regressions, we use the generalized trust measure as opposed to a measure of specific institutional trust because of the limited coverage and possible selectivity of the latter set of variables. For example, the World Values Survey question regarding trust placed in the central government covers 69 countries and 123 country-years, compared to our baseline trust measure, which covers 108 countries and 400 country-years. Moreover, the response rates of the specific trust questions are much lower than that of the generalized trust question. For example, in our sample, 16.7% of the individual responses for trust in the central government are missing values, whereas only 4.9% of the responses for generalized trust are missing values. This is a concern if response is non-random.

[17] The average level of generalized trust for each country is reported in Appendix Table A.1, where countries are grouped into six regions: Eastern Europe and the former Soviet Union; Latin America and the Caribbean; North Africa and the Middle East; sub-Saharan Africa; Western Europe and offshoots; and Asia.

and Norway), we find that the average rate of political turnover in the former group was 6.35 percentage-points higher than in the latter from 1980–2000.[18]

A potential threat to our identification strategy is that trust might be correlated with other factors that affect the extent to which recessions result in political turnover. We investigate the bivariate relationship between trust and a large number of potential correlates. The estimates in Table 1 use the baseline sample of democracies. The one exception is the last row, where we regress trust on a dummy variable for democracy using the full sample. The correlation coefficients, which are reported in column (1), show that some characteristics are correlated with generalized trust. Countries with higher levels of trust tend to have less frequent recessions, higher economic growth, more trade, longer lengths of leader tenure, less ethnic fractionalization, more democracy, and less conflict.[19]

The descriptive statistics support predictions 2 and 3 of the model, described in section 2.2. Higher-trust countries tend to have higher output (prediction 2) and to experience longer lengths of leader tenure (prediction 3).

We also explore the extent to which economic downturns are correlated with other factors. Column (2) of Table 1 reports the relationship between our recessions indicator variable and a range of other characteristics. We find that the occurrence of recessions is (mechanically and therefore unsurprisingly) associated with lower rates of economic growth. It is also associated with more trade openness and less democratic institutions.

Our baseline specification and auxiliary regressions flexibly control for all of these factors.

5 Results

5.1 Baseline Estimates

Panel A of Table 2 presents the baseline estimates. In this panel, we define a recession as any country-year observation with GDP growth over the previous year that is less than the 10th percentile of all GDP growth values in our sample. We begin by examining the relationship between the occurrence of a recession and leader turnover. Column (1) reports estimates without country fixed effects, while column (2) includes country fixed effects. All other control variables from equation (1) are included in both specifications.

In evaluating the effect of recessions on leader turnover, note that the coefficient for the

[18] This difference is not due to systematically shorter-term lengths (i.e., more scheduled elections) in higher trust countries. During 1980–2000, Greece and Portugal had six regular elections, France held five elections, and Denmark, Norway, and Sweden had 7, 5, and 6 regularly scheduled elections, respectively.

[19] See the data appendix for the details of these additional variables.

uninteracted recession indicator is the effect of a recession on leader turnover for an observation that has all values of zero for all the controls that are interacted with the recession indicator (see the bottom of the table). To facilitate interpretation, Table 2 reports the effect of a recession on leader turnover for an observation with all control variables evaluated at their mean values.

Columns (1) and (2) show that the effect of a recession on leader turnover (with all controls evaluated at their means) is positive and significant in both specifications. Thus, consistent with existing studies, we find that economic downturns lead to a greater likelihood of leader turnover (e.g., Wolfers, 2007; Brender and Drazen, 2008). According to the magnitude of the estimates, a recession results in a thirteen or sixteen percentage-point increase in the probability of leader turnover (depending on the specification). This is sizable given that the mean of leader turnover, shown at the top of the table, is 24 percent.

Column (3) reports the baseline specification, equation (1), which includes the interaction of the recession indicator with the average trust level of a country. The estimated coefficient for the interaction term is negative and significant at the 1% level. Recessions are less likely to result in leader turnover in countries with more trust. To assess the magnitude of the effect, we compute the difference in predicted turnover that results from a one-standard-deviation change in trust. As reported in Appendix Table A.2, the standard deviation of the trust variable is 0.132. The coefficient for the interaction term, -0.558, implies that when there is a recession, the difference in the probability of leader turnover between two countries with trust levels that are different by one standard deviation is 7.4 percentage-points ($0.132 \times -0.558 = -0.074$), which is 19.4% of a standard deviation of leader turnover ($0.074/0.382 = 0.194$).

For a concrete example, consider the different effects of a recession between the Western European countries in our sample with the highest and lowest trust measures: Norway, which has a trust measure of 0.70, and Portugal, which has a measure of 0.19. The estimated coefficient of the interaction term implies that the occurrence of a recession is 28 percentage-points more likely to cause political turnover in Portugal than in Norway.

In column (4), we add region fixed effects interacted with year fixed effects to absorb time-varying changes that affect regions of the world differently. We use the five world regions defined by the United Nations.[20] Our estimates remain very similar.

We next check the sensitivity of our baseline linear probability estimates to the use of a logistic model. Column (5) reports the estimated marginal effects (evaluated at means) from a logit model. The interaction coefficient is negative and significant. Therefore, the main result is not sensitive to the functional form of the estimation model. For the remainder of

[20]The five regions are Africa, the Americas, Asia, Europe, and Oceania.

the paper, we will use the linear probability model.

In Panel B of Table 2, we repeat the earlier estimates with a different definition of recessions. Instead of using a cutoff value of the 10th percentile of GDP growth observed in all countries and years, we use the 5th percentile of GDP growth observed in all countries and years. Any country-year observation whose GDP growth over the previous year is less than this cutoff is defined as a recession. The coefficients in this panel are very similar to those in Panel A. In particular, the coefficients on the interaction of trust and the recession indicator in columns (3)–(5) are always negative and significant at the 1% level. The effect of the uninteracted recession indicator evaluated at the mean is similarly positive and statistically significant at the 1% level.

Finally, in Panel C of Table 2, we repeat the same five columns but use non-parametric GDP growth indicators. We create indicator variables for country-year observations that fall within one of four percentile categories of all GDP growth values: 0-10th percentile, 10-20th percentile, 20-30th percentile, and 30-40th percentile. What we observe in columns (3)–(5) is that the interaction of trust and recessions is negative and statistically precise only for the lowest category of GDP growth percentiles, from 0-10th percent. The coefficients on the remaining three growth indicators are all imprecisely estimated. This shows that our main result is due to electoral performance in years with particularly poor economic performance.

5.2 Effects in Non-Democracies

Our analysis focuses on democracies because the main mechanism for political turnover we have in mind is electoral accountability enforced by voting. We expect leader turnover to be less elastic with respect to voters and economic performance in non-democracies (Klick, 2005; Acemoglu and Robinson, 2005). Table 3 reproduces the estimates from Panels A and B of Table 2 for a sample of autocracies. As before, we distinguish democracy from autocracy using the categorization of Cheibub, Gandhi, and Vreeland (2010) and Bjørnskov and Rode (2017).

Panel A reports estimates when recessions are defined using the 10th percentile cutoff and Panel B reports estimates using the 5th percentile cutoff. We find that the coefficients for the interaction of trust and the incidence of a recession are much smaller in magnitude when compared to the estimates for democracies (see Panel A of Table 2). In addition, they are insignificant. The findings are consistent with our interpretation that the mechanism underlying our main results reflects the views of citizens expressed through voting.

5.3 Effects on Regular versus Irregular Turnovers

In this section, we examine the effects of trust and recessions on the probability of a regular turnover occurring and the probability of an irregular turnover occurring. A regular leader turnover is one where the new leader is selected in a manner prescribed by either explicit rules or established conventions, irrespective of the nature of the previous leader's exit. For example, if a president exits due to an assassination and is replaced by a vice president, then the turnover is considered regular. For a turnover to qualify as being irregular, there must be a violation of convention by the entrant. For example, if the vice president who is next-in-line obtains power through a coup, then this would be coded as an irregular turnover. The most common causes of irregular turnovers in the data are military coups and foreign military impositions.[21] Therefore, we expect regular turnovers to be more elastic with respect to voter preferences than irregular turnovers (for the same reason that turnovers are less elastic in autocracies with respect to voter preferences). As such, they are less likely to reflect changes in the extent to which citizens blame politicians for economic downturns.

The analysis pools democracies and non-democracies because irregular turnovers are rare in democracies. We estimate a multinomial logit model, where the potential outcomes in each country or period are: no change in leader, a regular leader turnover, and an irregular leader turnover. The estimates are reported in Table 4. For comparison, column (1) reproduces our baseline OLS estimates for democracies, while column (2) reports our baseline OLS estimates for the pooled sample of democracies and non-democracies. The point estimate in column (2) is smaller in magnitude, which is not surprising given that the sample now includes observations that are non-democracies for which our mechanism of interest is less relevant.

Columns (3a) and (3b) report the multinomial logit estimates for the pooled sample. The omitted category is for the event of no leader turnover. Column (3a) reports the marginal effect of the trust-recession interaction on the probability of a regular leader turnover (evaluated at the sample means). Column (3b) reports the marginal effect of the trust-recession interaction on the probability of an irregular leader turnover. We find that, following an economic downturn, greater trust reduces the probability of a regular leader turnover, but it does not reduce the probability of an irregular turnover. The results are consistent with the belief that irregular turnovers are less elastic with respect to economic fluctuations.

[21] The coding is from the *Archigos* database.

5.4 Timing of Elections

To further explore the role of the electoral process, we check whether the effects of interest are stronger in election years. We do this by dividing our baseline sample of democracies into observations that are regularly-scheduled election years and those that are not, and examine the extent to which our results are stronger in election years. In countries where early elections can be called, regularly-scheduled elections are defined as those that take place at the *de jure* term limit. Hence, early elections are not treated as regularly-scheduled. We use data from the *Database of Political Institutions* (Keefer, 2015) to identify years in a country during which a regular election was scheduled. Using scheduled elections is important because the timing of actual elections can be endogenous. Thus, their use avoids dividing the sample by an endogenous variable. After dividing observations into those that are regular election years and those that are not, we estimate our baseline equation (1) for the two samples.

The estimates are reported in columns (4) and (5) of Table 4. We find that the estimated effect for election years is larger in magnitude than the baseline estimate reported in column (1), while the estimate for non-election years is smaller and statistically insignificant. Two coefficients are statistically different: with a seemingly-unrelated regression, the p-value for the test of equality is 0.0202. This pattern is consistent with the hypothesis that voting is an important mechanism underlying the estimated effects.

5.5 Main Results Summary

Thus far, the estimates show that trust attenuates the link between recessions and leader turnover in democracies. The effect is most prominent for regular leader turnovers and during regularly scheduled election years. We find little evidence of a similar effect in autocracies, which is consistent with our hypothesis that voting is the primary channel through which the effect takes place.

6 Robustness

6.1 Additional Controls and Omitting Outliers

This section tests the sensitivity of our baseline estimates. As we discussed above, one of the challenges for our preferred interpretation is that trust may be correlated with other factors that may affect turnover during recessions. Similarly, recessions may be correlated with other variables that interact with trust to affect turnover. We have already included a

large number of potential correlates in the baseline specification. To examine the importance of more omitted variables in the baseline, we check the sensitivity of our estimates to the inclusion of additional control variables.

The first factor that we consider is openness to international trade, measured as exports plus imports divided by GDP. There are many reasons that trade openness could matter for political turnover. For example, it may be harder for voters to understand the relationship between the politician's effort and economic outcomes in open economies (Hellwig, 2007). We address this by controlling for three additional variables in the baseline, equation (1): lagged trade openness, its interaction with trust, and its interaction with the recession indicator variable. Column (2) of Table 5 reports these estimates, which are very similar to the baseline reported in column (1) for comparison.

We next consider a large number of additional factors that can conceivably be correlated with average trust and independently influence the probability of a turnover during a recession: a country's average rate of leader turnover, a country's average growth, a country's average diversity (ethnic, linguistic, or religious), and a country's average citizen support for regulation. We re-estimate equation (1), controlling for the interaction of each factor with the recession indicator variable. The estimates, which are reported in columns (3)–(6), show that the interaction of trust and the occurrence of a recession remains robust.[22]

We also check that our estimates are not due to a small number of influential observations. We do this by calculating the influence of each observation using Cook's distance and omitting observations with a distance greater than $4/n$, where n is the number of observations in the sample (Belsley, Kuh, and Welsch, 1980). Column (7) shows that the interaction coefficient for the restricted sample continues to be negative and similar in magnitude to the baseline. Thus, the estimates are robust to removing observations that are outliers.

In column (8), we consider the possibility that our results could be driven by spurious trends. To check for this, we re-estimate equation (1) using leader turnover lagged by two years (i.e., in period $t-2$) as the outcome variable. We use a two-year lag instead of a one-year lag because the recession indicator is based on the change in economic growth from year $t-1$ to year t. The interaction coefficient is positive, small in magnitude, and statistically insignificant. This alleviates the concern that our results are driven by spurious trends.

To assess the possibility that our estimates are biased by other country characteristics, we check the sensitivity of our estimates to controlling for a large number of country-specific

[22]The number of observations varies across columns because of differences in the availability of the control variables. Since all of the variables are time-invariant, the main (uninteracted) effect of each variable (as well as the interaction of each with the time-invariant trust variable) is absorbed by the country fixed effects.

features interacted with the recession indicator. We first consider other commonly studied cultural traits that might affect how individuals assess the performance of leaders during recessions. These include risk preferences, thrift, obedience, locus of control, and the importance placed on tradition. The details of each measure are provided in the Appendix. We find that our estimate of interest remains very similar when controlling for any of these characteristics. See Appendix Table A.3.

Next, we consider time-invariant economic features which may be correlated with trust, and can affect voters' response or perception of a recession. We control for proxies of a country's economic structure, all measured in 1970: the share of GDP in agriculture, mining, manufacturing, construction, retail, transport or other sectors. We also control for the following economic performance indicators: the level and growth of GDP, the unemployment rate, and trade intensity (exports plus imports divided by GDP). To capture the possibility that some countries may be less developed or be more used to volatile economic conditions, we calculate two time-invariant measures per country – the mean and variance for the sample period – and control for these measures interacted with the recession dummy variable. The results are very robust. See Appendix Tables A.4 and A.5.

6.2 The Validity of the Trust Measure

There are several potential concerns related to our measure of average trust. Given that trust may be eroded by economic downturns (Stevenson and Wolfers, 2011), the average measure we use, which includes trust measured in year t, may suffer from reverse causality. We address this concern in several ways. First, we redefine the value of trust to be the level of trust observed in the first year for which data are available for the country. Second, we calculate an alternative measure of average trust that omits data from surveys conducted during a recession year in a country (using our baseline definition of recessions). Third, we calculate another measure that not only omits surveys if they were conducted during a recession but also in the two years following. The estimates from these procedures are reported in columns (2), (3), and (4) of Table 6. The results are similar to the baseline, which is reproduced in column (1) for comparison. In fact, the estimated magnitudes increase slightly with the alternative measures.

Another concern with the trust measure is the quality of the underlying survey data. In an attempt to test the importance of this concern, we have read through the documentation of all of the surveys from which the trust measures are taken and manually coded a measure of data quality. We code a survey as low-quality if it does not report the survey procedure;

has a missing or incomplete technical report; appears to be self-administered, or administered through the mail; or covers only urban or only rural areas or does not specify that the coverage is representative. Using this information, we recreate our average trust measure after omitting all low-quality trust surveys. As a second strategy, we also identify surveys for which the documentation reports that the sample is not nationally representative.[23] We also construct a trust measure that also omits these surveys. The estimates of equation (1), using these two alternative measures, are reported in columns (5) and (6). We continue to find a negative relationship between the trust-recession interaction and leader turnover. In addition, the magnitude of the estimated effect increases somewhat using the alternative measures. This pattern is consistent with measurement error biasing our baseline estimates downwards.

As a further robustness check, we construct a measure of average trust that uses only the *World Values Surveys* and *European Value Surveys*, which are the most extensively used sources in the cultural economics literature. The estimates are reported in column (7). Despite the sample decreasing to 2,648 observations, the estimate of interest remains robust and the coefficient actually increases in magnitude.

An alternative strategy to using a trust measure based on survey data is to use a measure based on behavior in laboratory-based trust games (Berg, Dickhaut, and McCabe, 1995). In a recent study, Johnson and Mislin (2011) collect data from over 160 implementations of the trust game.[24] Using these data, we construct an experiment-based measure of a country's average level of trust, which is the average fraction sent by player 1 to player 2 in the trust game. The estimates using this alternative measure are reported in column (8). Since lab-based measures of trust are not as widely available as survey-based measures, the sample is much smaller (1,350 observations rather than 3,255) and this leads to a loss of power and precision. However, the magnitude of the point estimate remains very similar to the baseline estimate.[25]

In column (9), we use an alternative trust measure from the *Eurobarometer* Surveys. Unlike the measures we use, the survey question asks respondents to report their level of trust on a ten-point scale. For comparability with the estimates using other trust measures, we rescale the measure to range from zero to one rather than one to ten. As reported, our

[23]The list of low quality and unrepresentative surveys is reported in Appendix Table A.6.

[24]The game is a strategic game that involves two players. Player 1 is endowed with a sum of money (e.g., \$10) and chooses how much of this sum to send to player 2. The amount is increased by some multiple (e.g., doubled or tripled), and player 2 then decides how much of the increased amount to send back to player 1. The amount that is sent to player 2 by player 1 is a measure of player 1's trust of player 2. The amount sent back by player 2 to player 1 is a measure of player 2's trustworthiness. We use the average proportion sent by player 1 in trust games in each country as a measure of average trust in the country.

[25]Interestingly, we find that trustworthiness (the fraction sent back by player 2) is not an important determinant of the effect of recessions on political turnover.

findings remain similar when the alternative trust measure is used. Despite having far fewer countries in the sample (29 rather than 95), the coefficient of interest remains negative, similar in magnitude, and statistically significant.

6.3 Robustness to Alternative Measures of Democracy

To check that our main results are robust to the way that we measure democracy, Panels A and B of Table 7 report estimates using alternative measures of democratic and autocratic observations when looking at the two samples. In columns (2)–(5), we use the polity2 measure from the Polity IV dataset, which ranges from -10 to +10. In column (2), we use a cutoff of zero, which is a commonly used cutoff in the political science literature (Epstein, Bates, Goldstone, Kristensen, and O'Halloran, 2006). In column (3), we use a cutoff of five, the standard for "full" democracies used by the Polity IV project (Marshall, Jaggers, and Gurr, 2015). In column (4), we use a cutoff of eight, which restricts the sample to very stable democracies. In column (5), we use the median value in the sample. Finally, in column (6), we use the electoral democracy index from the Varieties of Democracy (V-Dem) database (Coppedge, Gerring, Skaaning, Teorell, Altman, Bernhard, and Zimmerman, 2018). We define countries and years that have a lagged index above the median value in the sample as democracies.

In columns (7)–(9), we apply the same thresholds as in columns (2), (3), and (5), but use the value of polity2 in the first year that each country appears in the sample. This creates a time-invariant definition for each country. In columns (10)–(12), we apply the same three threshold values to the mean value of democracy for each country over the sample period.

Overall, the interaction coefficients for democracies, reported in Panel A, are all negative and similar in magnitude to the baseline, which is reported in column (1), and statistically significant. The estimates for non-democracies, reported in Panel B, are all small in magnitude. Only the coefficient in column (4) is statistically different from zero, which uses a cutoff of eight for the lagged polity2 score, which assigns all but the strongest democracies into the autocracy group.

6.4 Robustness to Alternative Measures of Recessions

We check the robustness of our findings to different ways of measuring economic recessions. In Table 8, we construct the recession indicator using different GDP growth cutoffs. Recall that in our baseline measure, we defined recessions as any country-year observation with GDP growth less than the global 10th percentile of GDP growth in all years of our sample. We

also reported estimates using the 5th percentile of GDP growth. These two estimates are reproduced in columns (1) and (2) of Table 8.

In columns (3) and (4), we undertake a different but similar strategy, which is to compute GDP growth percentiles for each country separately. We then re-define recessions as any year in which a country's GDP growth is less than the 10th percentile or 5th percentile of its own historical GDP growth experience. Changing the cutoff from a global percentile to a within-country percentile has benefits and costs. One benefit is that countries may be on different growth trajectories, and a country with lower growth overall may be coded as having many more recessions than is true using a global measure. By using a within-country cutoff, we can account for different paths of growth across countries. On the other hand, the within-country measure mechanically forces all countries to have the same proportion of years defined as a recession. This is not desirable if, in reality, there are countries more prone to recessions, perhaps due to lower growth or higher volatility.

In columns (5) and (6), we compute GDP growth percentiles using the five world regions defined by the United Nations: Africa, the Americas, Asia, Europe, and Oceania. These regional cutoff measures present a compromise between the global and within-country measures. In each of the columns (3)-(6), we find that the coefficient of interest remains negative, precise, and of comparable magnitude to the baseline estimate.

In columns (7) and (8), we re-compute the recession cutoff values from columns (1) and (2), but use GDP growth from democracies only. In contrast, the baseline strategy uses a GDP growth cutoff that is defined using the GDP growth of all countries and all years for which we have data. Using this alternative method yields negative and precise coefficients.

In the Appendix, we also show that our results are robust to omitting years with global recessions as defined by the International Monetary Fund (negative real per capita world GDP growth): 1975, 1982, 1991, and 2009 (International Monetary Fund, 2009). We would be worried if these particular recessions were driving our results. As reported in Appendix Table A.7, the estimates are very similar when we omit these years from the sample.

6.5 New Democracies and Less Developed Countries

In an influential earlier paper, Brender and Drazen (2008) (henceforth BD) examines the relationship between macroeconomic performance and re-election probabilities. They find no average relationship across countries, but a strong positive relationship between growth and re-election for "new" democracies and less developed economies. Both our study and theirs examine dimensions of heterogeneity in the relationship between low economic growth and

political turnover. To understand whether these dimensions matter independently, we include our explanatory variable and theirs in the same regression.

The estimates are reported in Table 9, where column (1) restates our baseline estimates of equation (1) for comparison. Column (2) replicates the BD estimates as closely as possible using our data. We follow their definition of developed economies: countries that are members of the OECD between 1960 and 2003, which is the sample period of their study. Additionally, we use a similar, though not identical, definition of new democracy. The difference is due to the fact that our observations are at the country-year level rather than the country-election level as in the BD analysis. We code an observation as a new democracy if it is within eighteen years from when the country's Polity 2 scores switched from negative to non-negative values. For comparison purposes, we interact the BD variables with our recession indicator instead of a continuous measure of growth, as in the original BD study. This does not change the conclusion. Note that our dependent variable, an indicator for turnover, is the inverse of theirs, an indicator for the re-election of the incumbent.

Following the analysis of BD, we include the interaction of the recession and democracy indicators; the triple interaction of the old democracy, recession, and developed economy indicators; and the triple interaction of the old democracy, recession, and less-developed economy indicators. As in BD, we also control for a developed economy indicator and an indicator that equals one if the election occurs under majoritarian electoral rules rather than proportional representation. The limited availability of this control reduces our sample size in columns (2), (3), and (5).[26] Introducing the trust variable slightly reduces our sample size further in columns (4) and (6).

Column (2) reports estimates from a specification that follows BD in excluding country and year fixed effects. The results are consistent with BD. Recessions increase the probability of turnover in new democracies and in old democracies that are less developed. In column (3), we add country and year fixed effects, as in our baseline specification.[27] The BD results are robust to this inclusion. In column (4), we add the interaction of recession and trust to estimate the main explanatory variables of interest from the two papers in one regression. The interaction of recession and trust is slightly less precise than in column (1), which is likely due to the sample size being smaller than in our baseline, but the magnitude is almost identical. The interaction of the recession and new democracy indicators, as well as the triple interaction of the old democracy, recession and less developed indicators, continue to be

[26] If we deviate from the BD specification and do not control for the majoritarian indicator, then we are able to maintain our sample size. The estimates in this case are qualitatively identical to what we report here.

[27] The time-invariant developed economy indicator is absorbed by the country fixed effects.

statistically significant and positive. The two triple interactions: old democracy, developed economy and recession indicators; and old democracy, less developed economy and recession indicators are very similar in magnitude. However, the former triple interaction, which is insignificant in BD, is not robust to the inclusion of lower order interaction terms. The original BD analysis does not include the double interactions of the developed economy and recession indicators, the developed economy and old democracy indicators, or the uninteracted old democracy indicator. In columns (5) and (6), we re-estimate the specifications from columns (3) and (4) including these variables. The estimates are again consistent with BD's original findings. Recessions reduce the probability of re-election, but only in new democracies and old democracies with less developed economies. In addition, as in columns (3) and (4), the inclusion of our trust interaction increases the magnitude and significance of the BD variables.

In summary, our main result is robust to the inclusion of the BD variables. Similarly, the BD results are robust to the inclusion of our main variable of interest – trust interacted with the recession indicator – as well as lower order interaction terms and fixed effects. Moreover, the BD variables become more economically significant (i.e., larger in magnitude) after accounting for heterogeneity in trust. Thus, accounting for the influence of trust enriches our understanding of the nuanced relationship between political turnover and economic shocks.

7 Subnational Analyses

7.1 Europe

The main cross-country analysis has advantages and disadvantages. On the one hand, it is more globally representative and offers substantial variation in economic performance, leader turnover, regimes and the nature of turnover, which allow us to shed light on the mechanisms underlying the results. On the other hand, the data are, by necessity, crude. For example, by only observing a binary variable for turnover, we are unable to detect changes in the support for the opposition if they are not large enough to result to turnover. Similarly, leaders might change while the government's ruling party remains the same.

To address this limitation, we examine vote share for the opposition for 23 European countries. They are reported at the sub-national region (henceforth, *region,* for brevity) level by the *European Election Database* (Norwegian Social Science Data Services, 2014), which enables us to conduct a region-level analysis with sufficient sample size.[28] For each country,

[28] We follow Cheibub, Gandhi, and Vreeland (2010) in identifying the leader (president in presidential systems, prime minister in parliamentary systems, president in dual systems). The names and political systems of the

we observe region-level vote shares in the election year.[29] The timing of elections vary across countries. In total, the sample includes every year from 1990 to 2014. All of the countries are democracies according to the definition we used earlier in the paper. We construct region-level measures of trust using data from the *European Social Survey* (European Social Survey ERIC , 2019), which measures trust using a zero to ten integer scale. For comparability with our previous trust measures, we rescale the measure so that it ranges from zero to one. Values of regional trust are shown in Figure 4.

We estimate the following equation

$$y_{i,c,t} = \beta\, Trust_{i,c} \times Recession_{c,t-1} + \alpha_i I^{Party}_{c,t-1} + \mathbf{X}_{c,t-1}\mathbf{\Gamma} + \gamma_t + \varepsilon_{i,c,t}, \tag{2}$$

where $y_{i,t}$ is the share of votes in region i, country c, year t, for all politicians other than the incumbent. $Trust_{i,c}$ is a time-invariant measure of the average level of trust in region i of country c. $Recession_{c,t-1}$ is an indicator variable that equals one if a given country c experienced poor economic growth between years $t-1$ and t. We define a country as experiencing a recession if its GDP growth is lower than the 10th- or 5th-percentile of growth among all European countries during the sample period.[30]

The specification includes year fixed effects γ_t, which capture time varying factors that are similar across countries, as well as region fixed effects $\alpha_{i,c}$, which are allowed to vary depending on the alignment of the incumbent party. $I^{Party}_{c,t-1}$ is an indicator variable that equals 1 if the incumbent party of country c is left-leaning and zero if it is right-leaning, as coded by the ParlGov database.[31] The interacted fixed effects capture the average tendency of a region to vote for incumbent parties' that are more or less liberal. The equation also accounts for a vector of covariates, $\mathbf{X}_{i,c,t-1}$, which includes: the natural log of a country's real per capita GDP in year $t-1$ interacted with each region's measure of average trust and interacted with the recession indicator. We cluster the standard errors at the region level.

The coefficient β is our estimate of interest. If regions with a higher level of average trust are more likely to vote for the incumbent politician following a recession, then $\beta < 0$.

countries in our sample are reported in Appendix Table A.8.

[29] Regional definitions and boundaries correspond closely, though not exactly, to the Nomenclature of Territorial Units for Statistics (NUTS) system's level 3 designations (Eurostat, 2016)

[30] Using this definition, 6.2% and 3.7% of election years follow recessions. In Europe, during 1990-2014, only 3.7% and 1.6% of elections follow years when GDP growth is less than the global 10th- and 5th-percentile cutoffs we used in the main analysis.

[31] We code the alignment of European parties using the ParlGov database (Döring and Manow, 2019). In the dataset, parties are assigned to one of eight "families": conservative, right-wing, christian democracy, agrarian, social democracy, green, liberal, and communist/socialist. We broadly categorize these eight families into two groups: "left" (first four families) and "right" (latter four families). Our results are robust to changes in the categorization.

Estimates of equation (2) are reported in Table 10. Columns (1) and (2) report estimates using the 10th and 5th percentile definition of a recession, respectively. Using either definition of a recession, we find that regions with higher levels of trust are less likely to vote for the electoral challengers (i.e., more likely to vote for the incumbent) in the face of an economic recession. The estimates of β are both negative and significant at the 1% level. To assess the magnitude of the estimates, consider two regions, one with a level of trust at the 25th-percentile of the sample distribution, and the other at the 75th-percentile. The estimated coefficient of -78.58 in column (1) implies that the lower-trust region will vote for political challengers by 7.9 percentage-points less than the higher-trust region ($-78.58 \times (0.53 - 0.43) = -7.9$).[32] As a robustness check, in columns (3) and (4), we report estimates when we restrict the sample to countries with parliamentary systems, which is the most common system in Europe. The estimates are very similar to the full sample.

These results show that the patterns that we observe across countries can also be found when looking across European regions. The increased statistical precision is likely a result of the fact that regions within Europe are more comparable to each other than countries across the world (i.e., lower variance). Because we often have very few regions within a country, we are underpowered if we control for country-year fixed effects. Thus, the estimates here capture within *and* cross-country variation. In the next section, we isolate within-country variation by examining counties within the United States, a large country with rich cross-sectional variation in county-level trust.

7.2 United States

Exploiting within-U.S. variation allows us to hold constant observable differences in institutions and unobservable differences in factors such as culture and expectations of economic recovery. As with the within-Europe analysis, we examine subnational (i.e., county-level) vote shares for the challenger to the incumbent as the outcome and restrict the sample to election years.

We construct county-level trust using a number of surveys. One is the *General Social Survey* (GSS), which provides data from 1972-2016 (Smith, 2016), but only provides a county-level identifier beginning in 1993. We also use the *2000 Social Capital Benchmark Survey* and *2006 Social Capital Community Survey* (Saguaro Seminar, 2000, 2006).[33] In our baseline

[32] We show that the results are not driven by outliers by dropping influential observations as identified by Cook's distance. See Appendix Table A.9.

[33] We construct a measure of average trust, combining data from the different sources, using the following procedure. We first use the sampling weights provided by each source to construct a (representative) measure

regressions, we include all counties for which we have a trust measure, even if the county-level average is based on only one person. These include 1,665 counties and we refer to this variable as "Aggregate Trust (All counties)". To address the fact that counties with few observations will have greater measurement error, we also use a second measure that drops all counties with an average trust measure that is constructed from fewer than ten observations. This variable is available for 415 counties. The two variables are shown in Figure 3. The average trust for all available counties is shown by a color gradient, with deeper blue (darker) hues corresponding to greater average trust. We indicate the counties with a measure of average trust that is constructed with ten or more observations with diagonal lines.

We define recession to be years officially designated as a recession by either of two common indicators. The first is the GDP-based Recession Indicator Index from the Federal Reserve Bank of St. Louis. We refer to this as the FRED recession measure. The second is a measure from the National Bureau of Economic Research's official designation of U.S. expansions and contractions. We refer to this as the NBER measure. These two measures are highly correlated but do not perfectly coincide.[34] More importantly for our study, they are very salient to the American public because they are used by both the U.S. government and main media outlets. In our sample, there were a total of four recessions (four FRED, three NBER) prior to elections years.[35] The first election year after which our recession measure is available is 1968. Thus, the sample includes election years during 1968 to 2016. There are twelve election years in our sample.

We estimate the following equation:

$$y_{i,t} = \beta\, Trust_i \times Recession_{t-1} + \alpha_i I_{t-1}^{Party} + \gamma_t + \mathbf{X}_{i,t-1}\mathbf{\Gamma}_t + \varepsilon_{i,t}, \tag{3}$$

where i indexes counties and t indexes election years. The outcome of interest, $y_{i,t}$, is a

of the share of people in that county who believe that people can be trusted in general. We then take the weighted average county measures from each of the surveys, where the number of observations in each survey and county is used as weights.

[34]The two recession measures differ in their construction. The FRED is based on an index of economic performance, and a recession occurs when this index falls below a given cutoff. This index is solely based on quarterly GDP data, and it is computed immediately for the quarter just preceding the most recently available GDP numbers. Once the index is calculated for that quarter, it is never subsequently revised. On the other hand, NBER recessions are defined by the NBER Business Cycle Dating Committee and based on a subjective assessment of a set of indicators, like GDP and unemployment. The set of indicators changes over time and the relative weight placed on different indicators also changes over time. It defines peaks and troughs in economic activity, and refers to the period between a peak and a trough as a contraction or recession.

[35]The NBER recessions are a subset of the FRED recessions. In the United States, there are no Presidential elections that follow a year where GDP growth is less than the global 10th-percentile cutoff that we use to define recessions in the country-level analysis. Since we use all years, not just election years, to compute the cutoff, it is not a necessity that some election years fall below the cutoff.

county's vote share for the presidential challenger from the opposing party.[36] $Trust_i$ is a time-invariant measure of the average level of trust in county i. $Recession_{t-1}$ is an indicator variable that equals one if the United States experienced a recession at any point during the twelve months prior to the election, i.e., between November of year t and November of year $t-1$.

The estimate includes year fixed effects γ_t, which capture time varying factors that are similar across counties, including the direct effect of the recession indicator variable $Recession_{t-1}$. It also includes county fixed effects α_i that are allowed to differ depending on the party of the incumbent. I_{t-1}^{Party} is an indicator variable that equals 1 if the incumbent is a Democrat and zero if Republican. This captures the fact that some counties are always more likely to vote against a Democratic incumbent, while others are more likely to vote against a Republic incumbent.

The vector $\mathbf{X}_{it-1}$ includes two characteristics of the incumbent leader in power in year $t-1$: age when he entered office and an indicator for whether he is completing his second term.[37] It also includes measures of national real GDP.[38] We allow their effects to differ by each county's level of trust, as well as by whether there is a recession, by interacting each variable with trust and with the recession indicator variable. We cluster the standard errors at the county level.

We hypothesize that when there is an official recession, counties with higher average trust will have a lower share of voters for the presidential challenger, $\beta < 0$.

Table 11 columns (1)-(4) report estimates using the FRED recession measure, while columns (5)-(8) report those using the NBER measure. Columns (1)-(2) and (5)-(6) use the full sample, while columns (3)-(4) and (7)-(8) restrict the sample to counties for which we have raw measures of trust for ten or more individuals. In the even-numbered specifications, we allow the year fixed effects to differ by the four Census regions, which controls for time-varying factors that affect the regions differently (e.g., if the magnitude of the economic decline varies across regions and is correlated to trust).[39]

[36] The variable is constructed using data from the Voting and Elections Collection (CQ Press, 2018) and can range from zero to one.

[37] We do not include gender as a control, since all American presidents to date have been men.

[38] The presidential demographic variables are also reported by the Voting and Elections Collection (CQ Press, 2018). National GDP are reported by Federal Reserve Bank of St. Louis (FRED).

[39] We use the United States Census definition of regions. Region 1: Northeast. Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, New Jersey, New York, and Pennsylvania. Region 2: Midwest. Illinois, Indiana, Michigan, Ohio, Wisconsin, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota. Region 3: South. Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, District of Columbia, West Virginia, Alabama, Kentucky, Mississippi, Tennessee, Arkansas, Louisiana, Oklahoma, and Texas. Region 4: West. Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming, Alaska, California, Hawaii, Oregon, and Washington.

The results show that counties with more generalized trust are less likely to vote for the party of the Presidential challenger in the face of an economic recession. The estimates are negative and statistically significant at the 1% level in all columns. To assess the magnitude, consider two counties, one with trust levels at the 25th-percentile of the sample distribution and the other with trust levels at the 75th-percentile. The coefficient in column (1) of -0.00952 implies that these two counties will differ in vote shares for the presidential challenger by $-0.952 \times (0.908 - 0.102) = -0.76$ percentage-points. This is an economically significant effect given the narrow victory margins in U.S. elections (e.g., 0.3% in Michigan and 0.4% in New Hampshire in 2016).[40]

Overall, the evidence indicates that the effect of trust on voting in U.S. Presidential elections is consistent with the effects found in our cross-country analysis. When a recession occurs, counties with lower levels of trust are more likely to vote against incumbent leaders.

8 Trust, Turnover, and Economic Recovery

In this final section, we provide descriptive evidence on how differences in trust levels affect economic recovery following a recession. We first investigate whether countries with higher levels of trust recover faster following a recession relative to countries with lower levels of trust. We do this with the following equation:

$$\begin{aligned} Growth_{i,t} = \beta_1 \, Recession_{i,t-j} + \beta_2 \, Trust_i \times Recession_{i,t-j} \\ + \mathbf{X}_{i,t-1}\mathbf{\Gamma} + \gamma_t + \alpha_i + \varepsilon_{i,t}, \end{aligned} \tag{4}$$

where i indexes countries, t indexes years, and j is the number of years since the last recession. $Growth_{i,t}$ is the annual GDP growth rate during period t (i.e., from period t to $t+1$). $Trust_i$ is our baseline measure of trust and $Recession_{i,t-j}$ is an indicator variable that equals one if growth was in the bottom global 10th percentile during period $t-j$. The specification includes country fixed effects α_i and year fixed effects γ_t. The country fixed effects capture any time-invariant differences across countries, such as persistent differences in political institutions or corruption. Year fixed effects control for global trends that affect all countries similarly. The vector $\mathbf{X}_{i,t-1}$ includes four leader characteristics (current age, gender, days in office, and

[40] We show that the results are not driven by outliers by dropping influential observations as identified by Cook's distance. See Appendix Table A.10.

the number of times previously in office), GDP, democratic strength measured by the polity2 score, and an indicator variable for the presence of any conflict or war, each measured in the previous year.[41] The standard errors are clustered at the country level. Our coefficient of interest is β_2. A positive estimate suggests that countries with higher trust experience faster GDP growth in the years following a recession, while a negative estimate suggests that they experience slower GDP growth.

The estimates of equation (4) are reported in Table 12. Column (1) examines the differential growth experience of countries (by trust) one year after they experience a recession. Both coefficients are statistically significant. The estimate of β_1 is -0.0274 and that of β_2 is 0.056. Thus, the estimates show that countries with higher trust have better recovery in the year after a recession. To get a better sense of the implications of this, consider the country with the lowest value of trust in our sample (0.035 for Trinidad and Tobago). For this country, average growth in the year immediately following a recession is $-0.0274 + 0.035 \times 0.056 = -0.025$ or -2.4%. For the country in our sample with the highest value of trust (0.70 for Norway), growth in the year immediately following a recession is $-0.0274 + 0.712 \times 0.056 = 0.012$ or 1.2%.

Second, in column (2), we investigate differences in growth two periods after a recession.[42] We find that neither β_1 or β_2 are significantly different from zero. Although their signs are consistent with the estimates from column (1), their magnitudes are also much smaller. This suggests that the growth advantage of high trust countries in the years following a recession is only felt in the year that immediately follows. If we look beyond two years after a recession (estimates not reported here), we find estimates that are small in magnitude and not statistically different from zero. In columns (3)-(4), we repeat the analysis but with recessions defined with a 5th-percentile cutoff. The findings are the same when this recession measure is used.

9 Conclusion

This study investigates a novel hypothesis that political stability in the time of economic crisis critically depends on trust. We show that severe economic downturns are much more likely to lead to political turnover in low-trust countries than in high-trust countries. The findings

[41] All estimates that we report are qualitatively identical if omit the set of controls and just examine differences in the raw data.

[42] In the specifications we report here, we include one lag at a time, which facilitates easier interpretation given the temporal autocorrelation in the data and collinearity between the independent variables. However, the estimates including all lags at once are very similar although slightly less precise.

are consistent with the perception that citizens in higher-trust countries are more willing to allow politicians to blame poor macro economic performance on bad luck. Moreover, we provide descriptive evidence that the higher trust countries which experience lower turnover achieve faster economic recovery. The empirical patterns, taken together, suggest that trust, by moderating voters reactions to economic crises, can play an important role in long-run economic and political stability.

These findings advance our understanding of the relationship between the economic environment, culture, and politics. Specifically, we show that longer-run cultural traits can interact with short-run economic shocks to affect political outcomes. These results will also allow policymakers to better predict where political instability will occur following recessions.

While our results are specific to the context of our data, it is worthwhile pointing out that conceptually, the process through which a nation achieves political stability during an economic crisis need not dramatically differ from other types of crises. For example, during times of war, leaders have famously fought to create a sense of solidarity and trust amongst its citizens in order to push through the crisis (e.g., Vermeiren, 2017). We also observe that in the current crisis caused by the global pandemic COVID-19, countries with higher trust have fared much better than countries with lower trust (e.g., Durante, Guiso, and Gulino, 2020).

Our findings prompt several avenues of future research. The results suggest that trust can push countries to a positive equilibrium of more political stability, which leads to better economic well being, both of which, could in turn lead to higher trust. This emphasizes the importance of better understanding the interaction of culture, economics, and politics. It also prompts the investigation of how economic and political processes can shape cultural values in the long run, a subject that economic historians have studied, but for which our understanding is still limited.[43]

Our study is agnostic about whether low trust is inefficient. This is an important question for policy makers. The answer partly depends on what we think causes the cross-country variation in trust. On the one hand, low trust may be an outcome of bad politicians, which can lead to an equilibrium where low trust is efficient. On the other hand, if the current levels of trust are (at least partly) historically determined, then it may be inefficient for the modern political-economic context (even if it was historically efficient).[44] This would be consistent with a large body of evidence which finds that trust is a persistent cultural trait, driven by historical and evolutionary processes that have no relationship with business cycles or political turnover today. Thus, a complementary question is to understand the conditions

[43] See, for example, the works of Todd (1983), Fischer (1989), Greif (1994) and Zerbe and Anderson (2001).
[44] For a discussion of such cases of mismatch and historical examples, see Nunn (2021).

under which low trust is efficient. Historically, low trust may have emerged in some societies as an endogenous response to other factors, and thus was efficient. However, as these other conditions changed over time, these societies may be better off with higher levels of trust today. These are important questions for future research.

References

Acemoglu, D., and J. A. Robinson (2005): *Economic Origins of Dictatorship and Democracy*. Cambridge University Press.

Achen, C., and L. Bartels (2013): "Blind Retrospection: Why Shark Attacks are Bad for Democracy," Working Paper 5-2013, Vanderbilt University, Center for the Study of Democratic Institutions.

Aghion, P., Y. Algan, P. Cahuc, and A. Shleifer (2010): "Regulation and Distrust," *Quarterly Journal of Economics*, 125(3), 1015–1049.

Akhmedov, A., and E. Zhuravskaya (2004): "Opportunistic Political Cycles: Test in a Young Democracy Setting," *Quarterly Journal of Economics*, 119(4), 1301–1338.

Alesina, A., N. Roubini, and G. Cohen (1997): *Political Cycles and the Macroeconomy*. MIT Press, Cambridge.

Algan, Y., and P. Cahuc (2009): "Civic Virtue and Labor Market Institutions," *American Economic Journal: Macroeconomics*, 1(1), 111–45.

——— (2010): "Inherited Trust and Growth," *American Economic Review*, 100(5), 2060–92.

Algan, Y., S. Guriev, E. Papaioannou, and E. Passari (2017): "The European Trust Crisis and the Rise of Populism," *Brookings Papers on Economic Activity*, 2017(2), 309–400.

Alsan, M., and M. Wanamaker (2017): "Tuskegee and the Health of Black Men," *Quarterly Journal of Economics*, 133(1), 407–455.

Ananyev, M., and S. Guriev (2016): "Effect of income on trust: Evidence from the 2009 crisis in Russia," *Available at SSRN 2542001*.

Ashworth, S., E. Bueno de Mesquita, and A. Friedenberg (2017): "Accountability and Information in Elections," *American Economic Journal: Microeconomics*, 9(2), 95–138.

Bagues, M., and B. Esteve-Volart (2016): "Politicians' Luck of the Draw: Evidence from the Spanish Christmas Lottery," *Journal of Political Economy*, 124(5), 1269–1294.

BBC World News Desk (2002): "Turkey's Old Guard Routed in Elections," *BBC News World Edition*.

Belsley, D. A., E. Kuh, and R. E. Welsch (1980): *Regression Diagnostics: Identifying Influential Data and Sources of Collinearity*. Wiley, New York.

Berg, J., J. Dickhaut, and K. McCabe (1995): "Trust, Reciprocity, and Social History," *Games and Economic Behavior*, 10(1), 122–142.

Besley, T. (2006): *Principled Agents? The Political Economy of Good Government*. Oxford University Press, Oxford.

Bjørnskov, C., and M. Rode (2017): "Regime Types and Regime Change: A New Dataset," Aarhus: Aarhus University.

Bloom, N., and J. V. Reenen (2007): "Measuring and Explaining Management Practices Across Firms and Countries," *Quarterly Journal of Economics*, 122(4), 1351–1408.

Brender, A., and A. Drazen (2008): "How Do Budget Deficits and Economic Growth Affect Reelection Prospects? Evidence from a Large Panel of Countries," *American Economic Review*, 98(5), 2203–2220.

Brooke, J. (1990): "In Brazil, Scathing Criticism for the Departing President," *The New York Times*, March 12, 1990.

Butler, J. V., P. Giuliano, and L. Guiso (2016): "The Right Amount of Trust," *Journal of the European Economic Association*, 14(5), 1155–1180.

Cheibub, J. A., J. Gandhi, and J. R. Vreeland (2010): "Democracy and Dictatorship Revisited," *Public Choice*, 143(1-2), 67–101.

Cole, S., A. Healy, and E. Werker (2012): "Do Voters Demand Responsive Governments? Evidence from Indian Disaster Relief," *Journal of Development Economics*, 97(2), 167 – 181.

Coppedge, M., J. Gerring, S. Skaaning, J. Teorell, D. Altman, M. Bernhard, and B. Zimmerman (2018): "V-Dem Dataset Version 8," University of Gothenburg VDem Institute, University of Notre Dame Kellogg Center.

CQ Press (2018): "Voting and Elections Data," library.cqpress.com/elections/.

Dewatripont, M., I. Jewitt, and J. Tirole (1999): "The Economics of Career Concerns, part I: Comparing Information Structures," *Review of Economic Studies*, 66(1), 183–198.

Döring, H., and P. Manow (2019): "Parliaments and governments database (ParlGov): Information on parties, elections and cabinets in modern democracies," *Development version*.

Durante, R., L. Guiso, and G. Gulino (2020): "Asocial Capital: Civic Culture and Social Distancing during COVID-19," Working Papers 1181, Barcelona Graduate School of Economics.

Epstein, D. L., R. Bates, J. Goldstone, I. Kristensen, and S. O'Halloran (2006): "Democratic Transitions," *American Journal of Political Science*, 50(3), 551–569.

European Social Survey ERIC (2019): "European Social Survey (ESS), Round 9 - 2018," .

Eurostat (2016): "Nomenclature of territorial units for statistics," https://ec.europa.eu/eurostat/web/nuts/background.

Ezcurra, R. (2020): "Individualism and political instability," *European Journal of Political Economy*, p. 101959.

Fair, R. C. (1978): "The Effect of Economic Events on Votes for President," *Review of Economics and Statistics*, 60(2), 159–173.

Federal Reserve Bank of St. Louis (FRED) (2018): "U.S. Bureau of Economic Analysis, Gross Domestic Product [GDP]," https://fred.stlouisfed.org/series/GDP.

Feenstra, R. C., R. Inklaar, and M. P. Timmer (2015): "The Next Generation of the Penn World Table," *American Economic Review*, 105(10), 3150–3182.

Fiorina, M. P. (1978): "Economic Retrospective Voting in American National Elections: A Micro-analysis," *American Journal of Political Science*, pp. 426–443.

Fischer, D. H. (1989): *Albion's Seed: A Cultural History*. Oxford University Press, New York.

Gennaioli, N., R. L. Porta, F. Lopez-de Silanes, and A. Shleifer (2020): "Trust and Insurance Contracts," Working Paper 27189, National Bureau of Economic Research.

Goemans, H., K. S. Gleditsch, and G. Chiozza (2009): "ARCHIGOS: A Data Set on Leaders, 1875–2004, Version 2.9," Report.

Greif, A. (1994): "Cultural Beliefs and the Organization of Society: A Historical and Theoretical Reflection on Collectivist and Individualist Societies," *Journal of Political Economy*, 102(5), pp. 912–950.

Guiso, L., P. Sapienza, and L. Zingales (2004): "The Role of Social Capital in Financial Development," *American Economic Review*, 94(3), 526–556.

——— (2009): "Cultural Biases in Economic Exchange?," *Quarterly Journal of Economics*, 124(3), 1095–1131.

Healy, A. J., N. Malhotra, and C. H. Mo (2010): "Irrelevant Events Affect Voters' Evaluations of Government Performance," *Proceedings of the National Academy of Sciences (PNAS)*, 107(29), 12804–12809.

Hellwig, T. (2007): "Economic Openness, Policy Uncertainty, and the Dynamics of Government Support," *Electoral Studies*, 26(4), 772–786.

Hofstede, G. (2001): *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. Sage publications.

International Monetary Fund (2009): "World Economic Outlook: Crisis and Recovery," *World Economic and Financial Surveys*.

Johnson, N. D., and A. A. Mislin (2011): "Trust Games: A Meta-analysis," *Journal of Economic Psychology*, 32(5), 865–889.

Keefer, P. (2015): "Database of Political Institutions: Changes and Variable Definitions," *Development Research Group, World Bank*.

Klick, J. (2005): "Limited Autocracy," *Review of Law & Economics*, 1(2), 293–304.

Kramer, G. H. (1971): "Short-Term Fluctuations in U.S. Voting Behavior, 1896-1964," *American Political Science Review*, 65(1), pp. 131–143.

Langfur, H. (1987): "Troubled Brazil Turns Leader into Scapegoat," *Chicago Tribune*, May 18, 1987.

Larreguy, H., and J. Marshall (2017): "The Effect of Education on Civic and Political Engagement in Nonconsolidated Democracies: Evidence from Nigeria," *The Review of Economics and Statistics*, 99(3), 387–401.

Leigh, A. (2009): "Does the World Economy Swing National Elections?," *Oxford Bulletin of Economics and Statistics*, 71(2), 0305 – 9049.

Liberini, F., M. Redoano, and E. Proto (2017): "Happy Voters," *Journal of Public Economics*, 146, 41–57.

Marshall, M. G., K. Jaggers, and T. R. Gurr (2015): "Polity IV Project," Center for International Development and Conflict Management at the University of Maryland College Park.

Martinez-Bravo, M., G. Padro-i-Miquel, N. Qian, Y. Xu, and Y. Yao (2017): "Making Democracy Work: Culture, Social Capital and Elections in China," Working Paper No. 21058, National Bureau of Economic Research.

Martinez-Bravo, M., G. Padro-i-Miquel, N. Qian, and Y. Yao (2017): "Social Fragmentation, Public Goods and Elections: Evidence from China," Working Paper No. 18633, National Bureau of Economic Research.

Martinez-Bravo, M., and A. Stegmann (2017): "In Vaccines We Trust? The Effect of Anti-vaccine Propaganda on Immunization: Evidence from Pakistan," Discussion paper, CEMFI.

McLean, J. (2000): "The Philippines Struggles Against Economic and Political Crisis," *BBC World Service*, October 7, 2000.

Nordhaus, W. D. (1975): "The Political Business Cycle," *Review of Economic Studies*, 42(2), 169–190.

Nordhaus, W. D. (1989): "Alternative Approaches to the Political Business Cycle," *Brookings Papers on Economic Activity*, 20(2), 1–68.

Norwegian Social Science Data Services (2014): "European Election Database," .

Nunn, N. (2021): "History as Evolution," in *Handbook of Historical Economics*, ed. by A. Bisin, and G. Federico, pp. 41–92. North Holland, New York.

Persson, T., and G. Tabellini (2002): *Political Economics: Explaining Economic Policy*. MIT Press, Cambridge.

Powell Jr, G. B., and G. D. Whitten (1993): "A Cross-national Analysis of Economic Voting: Taking Account of the Political Context," *American Journal of Political Science*, pp. 391–414.

Rotter, J. B. (1980): "Generalized Expectations for Internal Versus External Control of Reinforcement," *Psychological Monographs: General and Applied*, 80(1), 1–28.

Saguaro Seminar (2000): "Social Capital Community Survey 2000," https://ropercenter.cornell.edu/2000-social-capital-community-benchmark-survey/.

——— (2006): "Social Capital Community Survey 2006," https://ropercenter.cornell.edu/2006-social-capital-community-benchmark-survey/.

Smith, T. W. (2016): *General Social Survey, 1972-2016 [Cumulative File].*

Spence, A. M. (1974): *Market Signaling: Informational Transfer in Hiring and Related Screening Processes*. Harvard University Press, Cambridge.

Stevenson, B., and J. Wolfers (2011): "Trust in Public Institutions over the Business Cycle," *American Economic Review*, 101(3), 281–287.

Swisher, K. (1992): "Sweden's Crazy 500 Percent Interest Rate," *The Washington Post*, September 18, 1992.

The Economist Editorial Board (2001): "A Woman's Work," *The Economist*.

——— (2002): "Turkey's Turning Point," *The Economist*.

Themnér, L. (2014): "UCDP/PRIO Armed Conflict Dataset Codebook," *Uppsala Conflict Data Program (UCDP)*.

Todd, E. (1983): *The Explanation of Ideology: Family Structures and Social Systems*. Blackwell Publishers, New York.

United Nations Statistical Division (2018): *National Accounts Main Aggregates Database*. UN.

Vermeiren, J. (2017): "Notions of solidarity and integration in times of war: the idea of Europe, 1914-18," *European Review of History*, 24(6), 874–888.

Wolfers, J. (2007): "Are Voters Rational?: Evidence from Gubernatorial Elections," Working paper, University of Pennsylvania.

Zerbe, R. O., and C. L. Anderson (2001): "Culture and Fairness in the Development of Institutions in the California Gold Fields," *Journal of Economic History*, 61(1), 114–143.

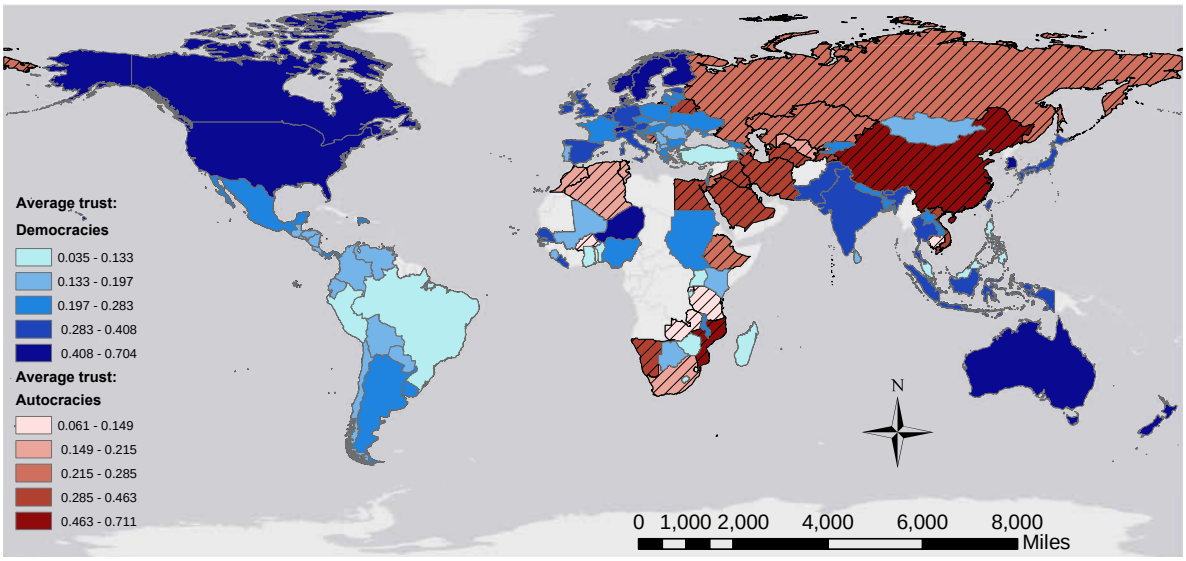

Figure 1: Average Trust Across Countries

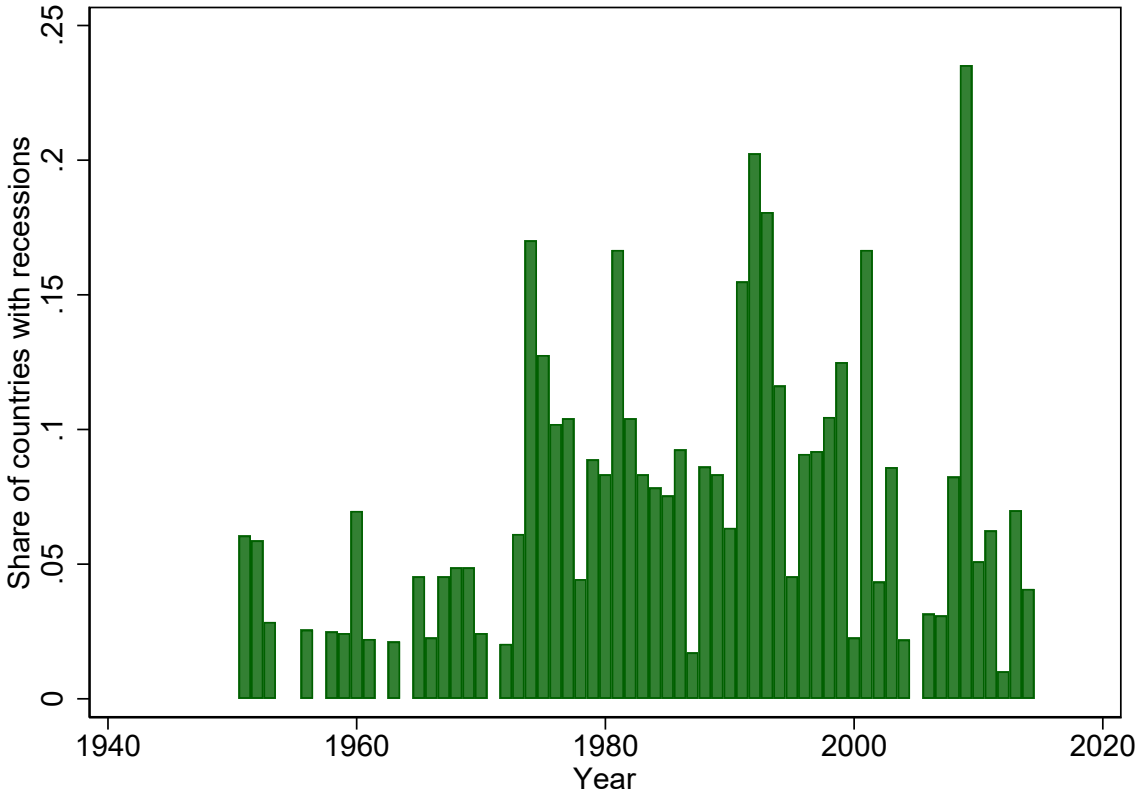

Figure 2: Frequency of Country-Level Recessions Over Time

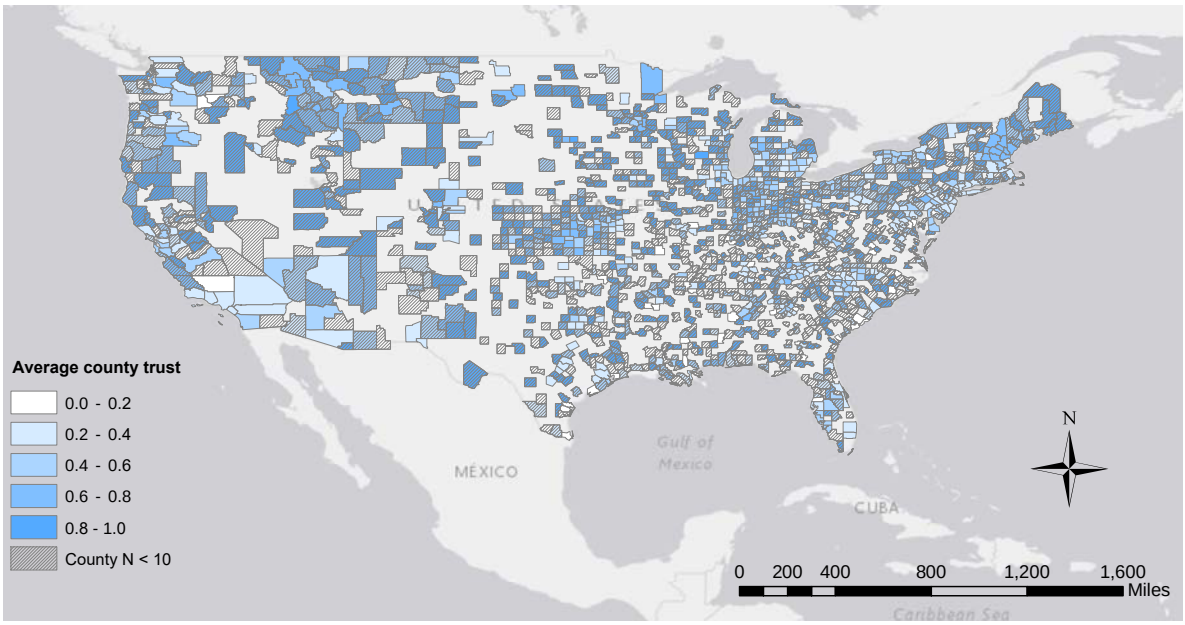

Figure 3: Average Trust Across U.S. Counties

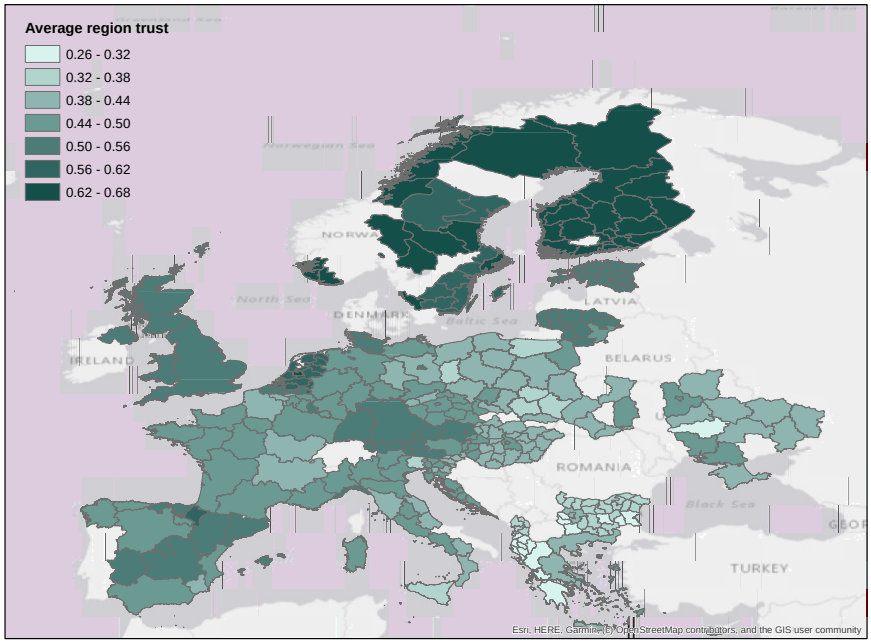

Figure 4: Average Trust Across European Regions

Table 1: Correlates of Trust and Recessions

	(1)	(2)
	Trust	**I(Growth < global 10th percentile)**
Economic Characteristics		
I(Growth < global 10th percentile)	-.065***	
Log GDP	.289***	-.150***
Growth in GDP	-.063**	-.528***
Trade openness: (X+M)/Y	-.161**	.102***
Leader Characteristics		
Turnover during election year	.031	-.006
Leader's age	.017	.022
Leader's gender	-.001	-.029
Days in office since entry	.073**	.018
Previous times in office	.007	.027
Institutional Characteristics		
Country-level variables:		
Ethnic fractionalization	-.379***	-.005
Religious fractionalization	.084	.055
Linguistic fractionalization	-.121	-.026
Country-year level variables:		
Polity2	.350***	-.076**
Conflict incidence	-.143**	-.030
Democracy (all observations)	.172**	-.102***

Notes: The sample is of democracies only except for the democracy indicator variable. The unit of observation is at the country and year level, except for the correlations between Trust and Ethnic Fractionalization, Religious Fractionalization, and Linguistic Fractionalization, which are at the country level. The Growth measures are for growth from period t to t+1. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

Table 2: Trust, Recessions & Turnover – Democracies

	Dependent Variable: Leader Turnover				
	(1)	(2)	(3)	(4)	(5)
			Baseline	Control for Region FE x Year FE	Logit
Mean of Dependent Variable	0.240	0.240	0.240	0.240	0.226
	Panel A. Recessions: GDP growth < global 10th percentile				
Trust x I(Growth<global 10th percentile)			-0.558***	-0.683***	-4.037**
			(0.210)	(0.239)	(1.659)
I(Growth<global 10th percentile)	-0.302	-0.366	-0.350	-0.575	-2.493
	(0.381)	(0.380)	(0.409)	(0.404)	(2.515)
Effect of I(Growth<global 10th percentile)	*.128***	*.16***	*.299***	*.324***	*1.9***
calculated at the variable means	*(0.035)*	*(0.035)*	*(0.069)*	*(0.072)*	*(0.498)*
R-squared	0.047	0.180	0.181	0.252	
	Panel B. Recessions: GDP growth < global 5th percentile				
Trust x I(Growth<global 5th percentile)			-0.823***	-0.967***	-7.361***
			(0.292)	(0.285)	(2.126)
I(Growth<global 5th percentile)	-0.884	-1.303*	-1.236**	-1.475**	-18.59***
	(0.780)	(0.753)	(0.606)	(0.665)	(4.276)
Effect of I(Growth<global 5th percentile)	*.061*	*.106*	*.281***	*.323***	*1.672***
calculated at the variable means	*(0.072)*	*(0.070)*	*(0.092)*	*(0.094)*	*(0.599)*
R-squared	0.042	0.175	0.175	0.247	
	Panel C. Recessions: GDP growth intervals				
Trust x I(Growth 0-10th percentile)			-0.531**	-0.641***	-3.844**
			(0.220)	(0.237)	(1.735)
Trust x I(Growth 10-20th percentile)			-0.136	-0.115	-0.818
			(0.182)	(0.195)	(1.121)
Trust x I(Growth 20-30th percentile)			0.210	0.196	1.499
			(0.155)	(0.158)	(1.087)
Trust x I(Growth 30-40th percentile)			0.117	0.0968	0.936
			(0.110)	(0.134)	(0.853)
R-squared	0.053	0.187	0.189	0.260	
Controls (All Panels):					
Country FE	N	Y	Y	Y	Y
Year FE	Y	Y	Y	N	Y
Region FE x Year FE	N	N	N	Y	N
Number of Clusters (Countries)	95	95	95	95	90
Observations	3,255	3,255	3,255	3,255	3,177

Notes: Observations are at the country and year level. Columns (1)-(5) control for lag leader characteristics (the age of the leader in the current year, gender, the total number of days in office and the number of times she was previously in office), lag polity2, lag GDP, lag conflict incidence; the interaction of each variable with trust, and the interaction of each variable with the recession indicator variable. Columns (2)-(5) control for country and year fixed effects, but column (1) only controls for year fixed effects. Column (4) also controls for region fixed effects times year fixed effects. Standard errors are clustered at the country level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

Table 3: Trust, Recessions & Turnover – Autocracies

	Dependent Variable: Leader Turnover				
	(1)	(2)	(3)	(4)	(5)
			Baseline	Control for Region FE x Year FE	Logit
Mean of Dependent Variable	0.117	0.117	0.117	0.117	0.122
	Panel A. Recessions: GDP growth < global 10th percentile				
Trust x I(Growth<global 10th percentile)			-0.117	-0.161	-1.017
			(0.145)	(0.149)	(1.881)
R-squared	0.063	0.168	0.168	0.233	
	Panel B. Recessions: GDP growth < global 5th percentile				
Trust x I(Growth<global 5th percentile)			-0.127	-0.223	-0.536
			(0.262)	(0.268)	(3.039)
R-squared	0.062	0.167	0.167	0.232	
Controls (All Panels):					
Country FE	N	Y	Y	Y	Y
Year FE	Y	Y	Y	N	Y
Region x Year FE	N	N	N	Y	N
Number of Clusters (Countries)	101	101	101	101	96
Observations	3,351	3,351	3,351	3,351	3,227

Notes: Observations are at the country and year level. Columns (1)-(5) control for lag leader characteristics (the age of the leader in the current year, gender, the total number of days in office and the number of times she was previously in office), lag polity2, lag GDP, lag conflict incidence; the interaction of each variable with trust, and the interaction of each variable with the recession indicator variable. Columns (2)-(5) control for country and year fixed effects, but column (1) only controls for year fixed effects. Column (4) also controls for region fixed effects times year fixed effects. Standard errors are clustered at the country level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

Table 4: Trust, Recessions & Turnover– Regular and irregular entry, election and non-election years

	Dependent Variable: Leader Turnover					
	(1)	(2)	(3a)	(3b)	(4)	(5)
			Multinomial Logit			
Dependent Variable:	Leader Turnover		Regular Turnover	Irregular Turnover	Leader Turnover	
					Democracies	
Sample:	Democracies	Democracies and Autocracies			Election Years	Non-Election Years
Mean of Dep. Var.	0.240	0.178			0.509	0.150
Trust x I(Growth	-0.558***	-0.326***	-3.045***	-0.255	-1.413**	0.0566
<global 10th percentile)	(0.210)	(0.113)	(1.059)	(3.310)	(0.592)	(0.270)
Observations	3,255	6,611	6,611		521	1,918
R-squared	0.181	0.151			0.481	0.254
Number of Clusters (Countries)	95	135	135		86	94

Notes: Observations are at the country and year level. All regressions control for country fixed effects, year fixed effects, the uninteracted recession indicator variable, as well as the full set of baseline controls, which include: lag leader characteristics (the age of the leader in the current year, gender, the total number of days in office and the number of times she was previously in office), lag polity2, lag GDP, lag conflict incidence; the interaction of each variable with trust, and the interaction of each variable with the recession indicator variable. Column (1) reports our baseline estimate, which is estimated using lagged democracies only. Column (2) reports the baseline regression estimated on the pooled sample of democracies and autocracies. In the multinomial estimates, reported in columns (3a) and (3b), the omitted category is for no political turnover. The coefficients reported are marginal effects evaluated at control variable means. Columns (4) and (5) estimate the baseline regression on a partition of the baseline democratic sample: those observations from election years, and those observations from non-election years. Standard errors are clustered at the country level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

Table 5: Robustness to Additional Controls and Omitting Outliers

	Dependent Variable:							
	Leader Turnover							Leader Turnover, Two-year Lag
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Baseline	Recession x Lag Trade Openness	Recession x Mean Turnover	Recession x Mean Growth Rate	Recession x Ethnic, Linguistic & Religious Fract.	Recession x Support for Regulation	Omitting Influential Obs.	
Mean of Dependent Variable	0.240	0.242	0.240	0.240	0.241	0.259	0.192	0.245
Trust x I(Growth	-0.558***	-0.564**	-0.453**	-0.409**	-0.745***	-0.824***	-0.854***	0.0131
<global 10th percentile)	(0.210)	(0.221)	(0.206)	(0.203)	(0.225)	(0.249)	(0.161)	(0.186)
Observations	3,255	2,856	3,255	3,255	3,021	2,106	3,036	3,003
R-squared	0.181	0.195	0.161	0.161	0.190	0.227	0.280	0.247
Number of Clusters (Countries)	95	92	95	95	91	59	90	91

Notes: Observations are at the country and year level. The sample includes democratic observations. All regressions control for country fixed effects, year fixed effects, the uninteracted recession indicator variable, as well as the full set of baseline controls, which include: lag leader characteristics (the age of the leader in the current year, gender, the total number of days in office and the number of times she was previously in office), lag polity2, lag GDP, lag conflict incidence; the interaction of each variable with trust, and the interaction of each variable with the recession indicator variable. Outliers defined using Cook's Distance. Standard errors are clustered at the country level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

Table 6: Robustness to Alternative Measures of Trust

	Dependent Variable: Leader Turnover								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			Omit Trust Surveys from:						
	Baseline	Base Year Trust	Recession Years	Recession Years and Two Years Following	Unreliable Surveys	Unreliable and Unrepresentative Surveys	Use only WVS and EVS Surveys	Johnson & Mislin: Experiment-Based Trust	Use only Surveys with 1-10 scale
Mean of Dep. Var.	0.240	0.240	0.242	0.242	0.240	0.239	0.252	0.282	0.280
Trust x I(Growth	-0.558***	-0.805	-0.605***	-0.621***	-0.647***	-0.753***	-0.530**	-0.969	-0.738*
<global 10th percentile)	(0.210)	(0.769)	(0.201)	(0.199)	(0.214)	(0.257)	(0.222)	(1.441)	(0.395)
Observations	3,255	3,255	3,179	3,179	3,171	2,991	2,648	1,350	1,341
R-squared	0.181	0.180	0.186	0.185	0.181	0.190	0.192	0.257	0.265
Number of Clusters	95	95	91	91	83	80	68	27	29

Notes: Observations are at the country and year level. All regressions control for country fixed effects, year fixed effects, the uninteracted recession indicator variable, as well as the full set of baseline controls, which include: lag leader characteristics (the age of the leader in the current year, gender, the total number of days in office and the number of times she was previously in office), lag polity2, lag GDP, lag conflict incidence; the interaction of each variable with trust, and the interaction of each variable with the recession indicator variable. Information about the definition of trust is provided in column headings and in the text. Standard errors are clustered at the country level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

Table 7: Robustness to Alternative Definitions of Democracy

	Dependent Variable: Leader Turnover											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
		Alternative definitions of democracy:										
		Using an observation's lagged value					Using a country's initial year value			Using a country's average value		
	Baseline (Cheibub et al, 2010)	Lag Polity2>0	Lag Polity2>5	Lag Polity2>8	Lag Polity2> median	V-Dem democracy index> median	Initial year Polity2>0	Initial year Polity2>5	Initial year Polity2> median	Average Polity2>0	Average Polity2>5	Average Polity2 > median
	Panel A. Democracies											
Mean of Dep. Var.	0.240	0.227	0.234	0.242	0.231	0.209	0.217	0.209	0.236	0.246	0.239	0.216
Trust x I(Growth <global 10th percentile)	-0.558*** (0.210)	-0.476*** (0.177)	-0.594*** (0.186)	-0.556** (0.210)	-0.474** (0.202)	-0.568*** (0.179)	-0.503** (0.198)	-0.568*** (0.179)	-0.568*** (0.170)	-0.679*** (0.205)	-0.578*** (0.172)	-0.439** (0.213)
Observations	3,255	3,682	3,033	1,898	3,273	3,172	2,105	3,172	3,608	2,275	3,333	3,954
R-squared	0.181	0.175	0.198	0.239	0.187	0.177	0.216	0.177	0.151	0.199	0.161	0.178
Number of Clusters (Countries)	95	112	98	58	103	63	42	63	70	43	64	121
	Panel B. Non-Democracies											
Mean of Dep. Var.	**0.117**	**0.116**	**0.130**	**0.152**	**0.126**	**0.149**	**0.160**	**0.149**	**0.108**	**0.142**	**0.116**	**0.121**
Trust x I(Growth <global 10th percentile)	-0.117 (0.145)	-0.0239 (0.158)	-0.122 (0.149)	-0.217 (0.133)	-0.109 (0.148)	-0.147 (0.172)	-0.0577 (0.141)	-0.147 (0.172)	-0.161 (0.153)	-0.0721 (0.147)	-0.173 (0.156)	0.0234 (0.140)
Observations	3,351	2,929	3,578	4,713	3,338	3,439	4,506	3,439	3,003	4,336	3,278	2,657
R-squared	0.168	0.176	0.153	0.134	0.163	0.142	0.127	0.142	0.129	0.118	0.128	0.183
Number of Clusters (Countries)	101	97	105	116	102	72	93	72	65	92	71	97

Notes: Observations are at the country and year level. All regressions control for country fixed effects, year fixed effects, the uninteracted recession indicator variable, as well as the full set of baseline controls, which include: lag leader characteristics (the age of the leader in the current year, gender, the total number of days in office and the number of times she was previously in office), lag polity2, lag GDP, lag conflict incidence; the interaction of each variable with trust, and the interaction of each variable with the recession indicator variable. Sample restrictions are stated in the column headings. Standard errors are clustered at the country level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

Table 8: Robustness to Alternative Definitions of Recession

	Dependent Variable: Leader Turnover							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Recession indicator equals one if GDP growth is less than:							
	Global		Within Country		Within Region		All Democracies	
	10th percentile (Baseline)	5th percentile	10th percentile	5th percentile	10th percentile	5th percentile	10th percentile	5th percentile
Mean of Dep. Var.	0.240	0.240	0.240	0.240	0.243	0.240	0.243	0.243
Trust x Recession Indicator	-0.558***	-0.823***	-0.478**	-0.556***	-0.623***	-1.026***	-0.366***	-0.592***
	(0.210)	(0.292)	(0.189)	(0.190)	(0.157)	(0.203)	(0.133)	(0.167)
Observations	3,255	3,255	3,255	3,255	3,400	3,255	3,400	3,400
R-squared	0.181	0.175	0.179	0.178	0.143	0.177	0.141	0.141
Number of Clusters (Countries)	95	95	95	95	98	95	98	98

Notes: Observations are at the country and year level. All regressions control for country fixed effects, year fixed effects, the uninteracted recession indicator variable, as well as the full set of baseline controls, which include: lag leader characteristics (the age of the leader in the current year, gender, the total number of days in office and the number of times she was previously in office), lag polity2, lag GDP, lag conflict incidence; the interaction of each variable with trust, and the interaction of each variable with the recession indicator variable. Sample restrictions are stated in the column headings. Standard errors are clustered at the country level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

Table 9: Comparison with Brender and Drazen (2008)

	Dependent Variable: Leader Turnover					
	(1)	(2)	(3)	(4)	(5)	(6)
	Baseline	Brender-Drazen (2008)				
Mean of Dep. Var.	0.240	0.220	0.220	0.224	0.220	0.224
Trust x I(Growth	-0.558***			-0.589*		-0.582*
<global 10th percentile)	(0.210)			(0.339)		(0.339)
New Democracy x I(Growth		0.112**	0.124**	0.278***	0.118**	0.273***
<global 10th percentile)		(0.0542)	(0.0556)	(0.0922)	(0.0580)	(0.0943)
Old Democracy x Developed x I(Growth		0.0612	0.0782	0.333**	-0.115	0.183
<global 10th percentile)		(0.0781)	(0.0780)	(0.167)	(0.230)	(0.278)
Old Democracy x Less Developed x I(Growth		0.106**	0.135***	0.259***	0.131***	0.251***
<global 10th percentile)		(0.0451)	(0.0476)	(0.0853)	(0.0477)	(0.0855)
Developed		-0.0137				
		(0.0181)				
Controls:						
Country FE	Y	N	Y	Y	Y	Y
Year FE	Y	N	Y	Y	Y	Y
Majoritarian	N	Y	Y	Y	Y	Y
Developed x Recession, Developed x Old Democracy	N	N	N	N	Y	Y
Old Democracy	N	N	N	N	Y	Y
Observations	3,255	2,487	2,487	2,304	2,487	2,304
R-squared	0.181	0.011	0.131	0.140	0.132	0.141

Notes: Observations are at the country and year level. The sample includes democratic observations. New Democracies are defined as any democracy that is within 18 years of a switch from negative to non-negative Polity 2 values. Developed nations are defined as members of the OECD during 1960-2003, the sample period in Brender and Drazen (2008). In column (2), the regression follows the specification of Brender Drazen's (2008) Table 5. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

Table 10: Trust, Recessions & Turnover in Europe

	(1)	(2)	(3)	(4)
	Dependent Variable: Fraction of a region's votes for the presidential or parliamentary challenger			
	All Systems		Parliamentary Only	
	I(Growth<Europe 10th percentile)	I(Growth<Europe 5th percentile)	I(Growth<Europe 10th percentile)	I(Growth<Europe 5th percentile)
Mean of Dependent Variable	65.46	65.46	68.17	68.17
Trust x I(Growth	-78.58***	-92.48***	-71.23***	-77.21***
<global 10th percentile)	(13.04)	(15.02)	(12.24)	(13.19)
Controls:				
Recession Indicator	Y	Y	Y	Y
Year FE	Y	Y	Y	Y
Region FE x Incumbent Party FE	Y	Y	Y	Y
Lag controls				
Lag National GDP	Y	Y	Y	Y
Trust x all lag controls	Y	Y	Y	Y
Recession indicator x all lag controls	Y	Y	Y	Y
Observations	804	804	716	716
R-squared	0.907	0.905	0.890	0.889
Number of Clusters (Sub-national regions)	180	180	155	155

Notes: This table uses European election and trust data to test the main hypothesis. Observations are at the sub-national region and year level. All regressions control for region fixed effects, region fixed effects times incumbent party fixed effects, year fixed effects, the uninteracted recession indicator variable, as well as the lag country GDP. We also include the interaction of lag national GDP with trust and the interaction of lag national GDP with the recession indicator variable. Standard errors are clustered at the county level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

Table 11: Trust, Recessions & Turnover in the U.S.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent Variable: Fraction of a county's votes for the presidential challenger							
	FRED recession measure				NBER recession measure			
	All counties		Counties with trust variable based on N>10		All counties		Counties with trust variable based on N>10	
Mean of Dependent Variable	0.463	0.463	0.457	0.457	0.461	0.461	0.454	0.454
Trust x Recession Indicator	-0.00952***	-0.00662***	-0.0419***	-0.0254***	-0.0166***	-0.00665***	-0.0701***	-0.0217**
	(0.00212)	(0.00207)	(0.00939)	(0.00921)	(0.00248)	(0.00207)	(0.0120)	(0.0100)
Controls:								
Recession Indicator	Y	Y	Y	Y	Y	Y	Y	Y
County FE x Incumbent Party FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	n/a	Y	n/a	Y	n/a	Y	n/a
Region FE x Year FE	N	Y	N	Y	N	Y	N	Y
Lag controls								
Lag President Age	Y	Y	Y	Y	Y	Y	Y	Y
Lag Indicator for Second Term	Y	Y	Y	Y	Y	Y	Y	Y
Lag National Real GDP	Y	Y	Y	Y	Y	Y	Y	Y
Trust x all lag controls	Y	Y	Y	Y	Y	Y	Y	Y
Recession indicator x all lag controls	Y	Y	Y	Y	Y	Y	Y	Y
Observations	21,339	21,339	5,319	5,319	22,956	22,956	5,723	5,723
R-squared	0.350	0.434	0.208	0.301	0.330	0.414	0.203	0.299
Number of Clusters (Counties)	1665	1665	415	415	1665	1665	415	415

Notes: This table uses United States election and trust data to test the main hypothesis. Observations are at the county and year level. All regressions control for county fixed effects, county fixed effects times incumbent party fixed effects, year fixed effects, the uninteracted recession indicator variable, as well as the full set of baseline controls, which include: lag leader characteristics (the age of the president when he entered office and the number of times he was previously in office), lag state GDP, lag United States GDP. We also include the interaction of each lag control variable with trust and the interaction of each lag control variable with the recession indicator variable. Standard errors are clustered at the county level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

Table 12: Trust and Economic Recovery

Dependent Variable:	GDP growth from year *t* to year *t* +1			
Recession Measure:	I(Growth<global 10th percentile)		I(Growth<global 5th percentile)	
	(1)	(2)	(3)	(4)
Mean of Dependent Variable	0.0404	0.0404	0.0404	0.0404
Recession last year (*t* -1 to *t)*	-0.0274***		-0.0296***	
	(0.00741)		(0.00707)	
x Trust	0.0556**		0.0559***	
	(0.0217)		(0.0207)	
Recession two years prior (*t* -2 to *t* -1)		-0.0133		-0.0148*
		(0.00894)		(0.00871)
x Trust		0.0306		0.0319
		(0.0231)		(0.0221)
Observations	3,161	3,161	3,161	3,161
R-squared	0.266	0.262	0.265	0.258
Number of Clusters (Countries)	78	78	78	78

Notes: The sample is comprised of democratic country-year observations. Observations are at the country and year level. Leader characteristics include the age of the leader in the current year, gender, the total number of days in office and the number of times he/she was previously in office. The "I" followed by a parenthetical inequality represents an indicator variable that equals one if the interior statement is true. The standard errors are clustered at the country level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

Appendix

A Variable Definitions and Sources

A.1 Generalized Trust

The generalized trust questions from the *World Values Survey*, the *European Values Survey* and the different *Barometer* series are formulated to produce binary measures. In the *Barometer* series, the following waves contain questions regarding generalized trust: *Afrobarometer* 2004, *Afrobarometer* 2008, *Asiabarometer* 2003-2007, *Latinobarometer* 1996-1998, and *Latinobarometer* 2000-2010.

In the *World Values Survey* and the *European Values Survey*, the question is worded as: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people? [1] Most people can be trusted. [2] Need to be very careful."

In the *Barometer* Surveys, the question is: "Generally speaking, would you say that you can trust most people, or that you can never be too careful when dealing with others? [1] You can trust most people. [2] You can never be too careful when dealing with others."

In robustness checks we omit data from surveys that are low-quality or unrepresentative. Table A.6 lists the countries and number of years for which the trust survey questions were deemed low-quality or nationally unrepresentative. We code a survey as low-quality if it does not report the survey procedure, has a missing or incomplete technical report, provides no breakdown between urban and rural observations, appears to be self-administered, or administered through mail. A survey is unrepresentative if the documentation explicitly states that the sample is not nationally representative.

A.2 Leader Turnover Indicator

Our turnover measure is computed from leader data from version 4.1 of the *Archigos* database (Goemans, Gleditsch, and Chiozza, 2009). The data cover all independent states and their effective leaders. Each country is included each year from 1945-2015.[45] The database identifies the actual effective ruler of each state on a case-by-case basis. For example, it avoids coding ceremonial monarchs in contemporary European countries as heads of state. In parliamentary

[45]The principal sources of raw data for *Archigos* are www.rulers.org and www.worldstatesmen.org. We corroborate the *Archigos* data with the *Change in Source of Leader Support* (*CHISOLS*) Dataset, constructed by Brett Ashley Leeds and Michaela Mattes. *CHISOLS* uses the same definition of a primary leader as the *Archigos* database and covers the years 1919 to 2015.

regimes, the prime minister is coded as the ruler; in presidential systems, the president is coded as the ruler. In communist regimes, the ruler is typically coded as the chairman of the party. In dual systems, where there is a president and a prime minister, the president is considered the leader.[46]

The data report the start date and end date of office for each leader-spell, the manner in which a leader enters office, and several leader characteristics. We define our main dependent variable as an indicator for whether a leadership transition occurred in a given year: a value of 0 represents no leadership transition, and a value of 1 represents a leadership transition.

A.3 Recession Indicator

Our measure of recessions is defined using data on national GDP from version 9.0 of the *Penn World Tables* (Feenstra, Inklaar, and Timmer, 2015). We use output-side GDP at current PPPs. From a sample of all countries and years for which we have GDP data, we construct a cutoff that represents the 10th percentile of observed values. We then generate an indicator which equals 0 if a country's GDP growth is larger than this cutoff, and equals 1 if a country's GDP is smaller than this cutoff.

A.4 Democracy Measure

Our baseline sample includes only country-years for which the country was democratic in the last period. We use the coding system of Cheibub, Gandhi, and Vreeland (2010) to define democracy for the baseline inclusion criteria. In that dataset, the definition of a democratic state is one that holds elections to select the executive and the legislature, has a closed legislature, legally allows multiple political parties, has multiple parties in practice, has a legislature with multiple parties, has seen a rules-based change in leadership, and whose incumbent leader has not consolidated power in a way that violates the above criteria.

A.5 Baseline Controls

Our baseline regression contains seven additional controls: four controls for leader characteristics, and three controls for national characteristics. The four leader characteristic controls come from version 4.1 of the *Archigos* database Goemans, Gleditsch, and Chiozza (2009). First, we include gender, a binary variable which equals 1 if a leader is male, and equals 0 if

[46] Goemans, Gleditsch, and Chiozza (2009) discuss the details of each country and exceptions to the usual coding rules for *Archigos*.

not. Second, we include age, which is a continuous variable that records the age of the leader in years. Third, we include the tenure of the leader in days during the current, uninterrupted leadership spell. For example, if a president is voted into office for two consecutive terms, the tenure variable includes the number of days since the start of the first term. If a president is in office for two non-consecutive terms, then the tenure variable will include the number of days since the start of the most recent term. Finally, we include a categorical variable that encodes the number of times a leader has previously held the same office. This variable takes values from 0 to 4 in our sample.

The three national controls are conflict incidence, GDP, and political regime. To measure armed conflict, we use version 4 of the UCDP/PRIO Armed Conflict Dataset Codebook (Themnér, 2014) and generate an indicator variable that takes a value of 0 if a country experiences no armed conflict in a given year, and takes a value of 1 if a country experiences any kind of conflict in a given year. An armed conflict is defined as "a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths." To measure GDP, we use the output-side GDP at current PPPs from version 9.0 of the *Penn World Tables* (Feenstra, Inklaar, and Timmer, 2015). To measure political regime, we use the Polity 2 variable from the Polity IV Project (Marshall, Jaggers, and Gurr, 2015). The Polity scale ranges from -10, which represents strongly autocratic states, to $+10$, which represents strongly democratic states.

B Model

The goal of the model is to provide a simple framework that helps to understand the main empirical finding, which is that recessions are less likely to result in political turnover in countries with higher levels of trust. The model we present here is based on Ashworth, Bueno de Mesquita, and Friedenberg (2017), which, in turn, builds on Dewatripont, Jewitt, and Tirole's (1999) well-known paper by adding a voting component.

B.1 A two-action model

There are two periods. In period 1, nature picks a politician, who is a high ability type, θ_h, with probability π, and a low ability type, θ_l, with probability $1 - \pi$. During their time in office, the politician exerts effort $a \in A$, where A is a set of feasible effort levels with $0 \in A$.

Output, y, is given by

$$y = f(a, \theta) + \varepsilon,$$

where ε is a mean-zero standard normal random variable with a pdf ϕ and cdf Φ. The function f satisfies

$$f(a, \theta_h) > f(a, \theta_l) \geq 0 \text{ for all } a.$$

The politician does not know his/her type when they choose their action. Voters are unable to observe the politician's type θ or their effort a, and can only observe output, y.

We assume that θ and a are complements, i.e., the cross-partial is positive: $f_{a\theta}(a, \theta) \geq 0$ for all a, θ. This means that high type politicians have higher returns on effort than low type politicians. Given that this seems to be the most natural setting to study, DJT only considers this case in their paper. However, Ashworth, Bueno de Mesquita, and Friedenberg (2017), also consider the alternative case where $f_{a\theta} < 0$.

The assumption $f_{a\theta} \geq 0$ implies that $f_a(a, \theta_h) > f_a(a, \theta_l)$ for all a, and therefore, that $f(\cdot, \theta_h) - f(\cdot, \theta_l)$ is an increasing function. One example that satisfies these assumptions, which we will use later, is

$$f(a, \theta) = \theta [x_0 + (x_1 - x_0) a],$$

for some $x_1 > x_0 > 0$.

At the end of period 1, voters decide whether to keep the current politician or to replace the politician, in which case they take another draw from the same pool. Voters' welfare is given by y.

In period 2, output y is again produced using the same technology. Since this is the last term in office and effort is costly, the politician exerts no effort. Since $f(0, \theta_h) > f(0, \theta_l)$, having high type politician is better for voters than having a low type.

The politician gets a benefit $B = 1$ from being in office and their cost of effort is $c(a)$.

For some combinations of parameter values, the game has multiple equilibria, characterized by different equilibrium values of effort chosen by politicians a, e.g., a^{**} and a^*, $a^{**} > a^*$. We will interpret a^{**} as the high trust equilibrium and a^* as the low trust equilibrium for reasons that are explained below. Let us now see how voting behavior varies, depending on the equilibrium level of a.

B.2 Voting

Suppose in equilibrium, voters believe that the politician has chosen an effort level a. If they observe output y, their posterior beliefs about the politician's type are given by

$$\begin{aligned}\Pr(\theta=\theta_h|y,a) &= \frac{\pi\phi(y-f(a,\theta_h))}{\pi\phi(y-f(a,\theta_h))+(1-\pi)\phi(y-f(a,\theta_l))}\\ &= \frac{\pi}{\pi+(1-\pi)\frac{\phi(y-f(a,\theta_l))}{\phi(y-f(a,\theta_h))}}.\end{aligned}$$

From here, we see that $\Pr(\theta=\theta_h|y,a)\geq\pi$ if and only if $\frac{\phi(y-f(a,\theta_l))}{\phi(y-f(a,\theta_h))}\leq 1$ or

$$\begin{aligned}\exp\left(-\frac{(y-f(a,\theta_l))^2}{2}\right) &\leq \exp\left(-\frac{(y-f(a,\theta_h))^2}{2}\right)\\ (y-f(a,\theta_l))^2 &\geq (y-f(a,\theta_h))^2\\ (f(a,\theta_h)-f(a,\theta_l))(2y-f(a,\theta_l)-f(a,\theta_h)) &\geq 0\\ y &\geq \hat{y}(a)\equiv\frac{f(a,\theta_l)+f(a,\theta_h)}{2}.\end{aligned}$$

The voter has a choice of either retaining the current politician and receiving the expected output $\bar{y}_2=\Pr(\theta=\theta_h|y,a)f(0,a_h)$ or of drawing a new politician and receiving the expected output $\bar{y}_2=\pi f(0,a_h)$. Thus, the incumbent will be kept in power if $y\geq\hat{y}(a)$ and replaced if $y<\hat{y}(a)$.

The expected output in period 1, $\bar{y}_1$, is given by

$$\bar{y}_1=\pi f(a,\theta_h)+(1-\pi)f(a,\theta_l).$$

We assume that if $y=\bar{y}_1$, then the politician is not replaced, which can be interpreted as an incumbency advantage. Thus, politicians are not replaced if

$$\begin{aligned}\bar{y}_1 &> \hat{y}(a)\\ \pi f(a,\theta_h)+(1-\pi)f(a,\theta_l) &> \frac{f(a,\theta_l)+f(a,\theta_h)}{2}\\ (2\pi-1)(f(a,\theta_h)-f(a,\theta_l)) &> 0\\ 2\pi &> 1.\end{aligned}$$

Thus, as long as the politician is more likely than not to be of the high type ($\pi>1/2$), then

they are not replaced on average, in any equilibrium.

Now, suppose that output is $\delta > 0$, but is below mean output levels. Then the politician is kept in power if

$$\begin{aligned} \bar{y}_1 - \delta &> \hat{y}(a) \\ (2\pi - 1)(f(a, \theta_h) - f(a, \theta_l)) &> 2\delta. \end{aligned}$$

Thus, there exists a cut-off output value, $\hat{\delta}(a)$, (defined so that the relationship above holds as an equality), such that if $\delta \leq \hat{\delta}(a)$, then the politician is kept in power. Otherwise, she is kicked out of office. Since $f(\cdot, \theta_h) - f(\cdot, \theta_l)$ is an increasing function, $\hat{\delta}(a)$ is increasing in a.

Lemma Consider two equilibria in which the politician selects a^{**} and a^{*}. Then, $\hat{\delta}(a^{**}) > \hat{\delta}(a^{*})$.

The economic intuition for the lemma above is as follows. When the politician exerts high effort, due to the complementarities between θ and a, it is harder for a bad politician to achieve the expected level of output, $\bar{y}_1(a)$. Thus, conditional on seeing $y \geq \bar{y}_1(a)$, the voters have a stronger posterior that they have a high ability politician, and the same shock, δ, is less likely to change it.

We interpret a^{**} as the high trust equilibrium and a^{*} as the low trust one. The rationale is as follows. Posterior beliefs, $\Pr(\theta = \theta_h | y, a)$, are less sensitive to shocks, δ, when $a = a^{**}$. Thus, voters "trust" that low output is more likely to be caused by an exogenous shock, ε, than by the politician is being a bad type.

The interpretation is tautological as it simply defines any equilibrium in which voter's behavior is less sensitive to shocks as a "high trust" equilibrium. This interpretation is meaningful in that it implies that "high trust" places have higher average output (since $\bar{y}_1(a^{*}) < \bar{y}_1(a^{**})$). In our sample, trust and GDP are positively correlated with $p < 0.01$.

B.3 The existence of multiple equilibria

Proposition 3 in Ashcroft et. al. (2011) shows that one can construct equilibria that support both a^{*} and a^{**} for appropriate choices of the effort set, A, and the cost function, $c(a)$, under our assumptions.

C Additional Details of Robustness Checks

C.1 Additional Controls: Cultural Traits

One alternative explanation of our baseline results is that trust is correlated with some other cultural trait that is the true driver of heterogeneity. In table A.3, we control for six other country-level measures of cultural values interacted with the recession indicator in the baseline regression in order to test whether any of them absorb the variation from the trust and recession interaction variable.

In column (2), we control for country-average danger avoidance using the *World Values Survey* question: "Living in secure surroundings is important to this person; to avoid anything that might be dangerous". In column (3), we control for the willingness to take risks using the *World Values Survey* question: "Adventure and taking risks are important to this person; to have an exciting life". In column (4), we control for value placed on traditions using the *World Values Survey* question: "Tradition is important to this person; to follow the customs handed down by one's religion or family". Each of these three questions is answered on a scale from 1 to 10, 1 implying "least important" and 10 implying "most important".

In columns (5) and (6), we control for country-level averages in *World Values Survey* prompts about values that should be taught to children. Column (5) controls for whether children should be taught "thrift, saving money and things" and column (6) controls for whether children should be obedient. The responses to these questions are binary.

In column (7), we consider ~~is~~ a country's average perception of how much control one generally has over life. This perception is commonly referred to as the *locus of control* (Rotter, 1980). The extent to which citizens believe that people in general (including politicians) have control over outcomes will affect the extent to which they hold politicians responsible for economic recessions, and therefore affect leader turnover. We measure the locus of control using the *World Values Survey* question: "Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where 1 means "no choice at all" and 10 means "a great deal of choice' to indicate how much freedom of choice and control you feel you have over the way your life turns out". Subjects then choose an integer ranging from one to ten. We construct a time-invariant measure of the average locus of control score in each country. The cross-country correlation between trust and the locus of control is 0.10 and is statistically insignificant (not presented in tables). We re-estimate equation (1) while controlling for the interaction of locus of control and the recession indicator variable. The estimates are reported

in column (7) of Appendix Table A.3. The main interaction between trust and recession is robust.

Finally, in column (8), we control for the measure of country-level individualism constructed in (Hofstede, 2001). This index captures the extent to which a culture's prevailing norm is that individuals should look after only themselves and their immediate family, in lieu of larger cohesive groups. Recent work by (Ezcurra, 2020) has documented that higher levels of individualism are associated with higher levels of political instability, which raises the possibility that, if trust and individualism are correlated, our main results may be driven by the latter. To address this possibility, we control for country-level individualism interacted with the recession dummy variable in column (8). Our results are robust.

C.2 Additional Controls: Economic Characteristics

In Appendix Table A.4, we report the baseline regression column (1). In columns (2)-(8), we control for the base year sectoral composition of each country's economy interacted with the recession indicator, which absorb differences in how countries with different sectoral compositions react to recessions. Data on national GDP by sector come from the United Nations Statistics Database (United Nations Statistical Division, 2018), and we use the earliest year available, 1970, as the base year. The sectors are agriculture, mining and extraction, manufacturing, construction, retail, transportation, and other. In column (9), we control for each sector shares interacted with year fixed effects. Across columns (2)-(9), the coefficient of interest remains negative, precise, and stable.

In Appendix Table A.5, we control for other country-level economic characteristics that may be correlated with trust, and that may affect how countries respond to recessions. We compute eight time-invariant economic measures (average GDP per capita levels, variance in GDP per capita levels, average GDP growth, variance in GDP growth, average percent unemployment, variance in percent unemployment, average total trade flows (imports plus exports) divided by GDP levels, and variance in total trade flows divided by GDP levels) and control for their interactions with the recession indicator. Column (1) reports the baseline estimate. Columns (2)-(9) report the estimates when we add each of these controls interacted with year fixed effects. Column (10) reports the estimate from the regression where we include all shares and their interactions. Across columns (2)-(10), the coefficient of interest remains negative, precise, and very similar in magnitude.

Table A.1: Trust by Region

E. Europe & Former USSR		Latin America & Caribbean		W. Europe & Offshoots		Sub-Saharan Africa		Asia	
Country	Trust	Country	Trust	Country	Trust	Country	Trust	Country	Trust
Macedonia	0.13	Trinidad and Tobago	0.04	Portugal	0.19	Cape Verde	0.04	Philippines	0.08
Moldova	0.16	Brazil	0.07	Malta	0.21	Mauritius	0.11	Malaysia	0.10
Albania	0.16	Peru	0.14	Greece	0.22	Guinea-Bissau	0.13	Sri Lanka	0.16
Slovakia	0.17	Paraguay	0.14	France	0.24	Ghana	0.13	Bangladesh	0.19
Georgia	0.19	Colombia	0.16	Luxembourg	0.30	Lesotho	0.13	Nepal	0.19
Armenia	0.19	Costa Rica	0.16	Italy	0.30	Kenya	0.15	Pakistan	0.27
Latvia	0.20	Chile	0.16	Belgium	0.31	Uganda	0.16	India	0.28
Croatia	0.21	Venezuela	0.18	Austria	0.34	Botswana	0.16	Indonesia	0.28
Slovenia	0.21	Nicaragua	0.18	Spain	0.35	Sierra Leone	0.16	Thailand	0.31
Hungary	0.24	Honduras	0.18	United Kingdom	0.38	Nigeria	0.17	Bhutan	0.35
Bulgaria	0.24	Bolivia	0.19	Ireland	0.41	Zambia	0.18	Taiwan	0.37
Poland	0.24	Ecuador	0.19	United States of America	0.41	Benin	0.19	Japan	0.38
Lithuania	0.27	El Salvador	0.21	Iceland	0.42	Burundi	0.19	Maldives	0.46
Kyrgyzstan	0.28	Panama	0.21	Canada	0.44	Mali	0.20		
Ukraine	0.29	Guatemala	0.21	Switzerland	0.46	Malawi	0.21	North Africa & Middle East	
Estonia	0.29	Argentina	0.21	Australia	0.47	Liberia	0.22	Cyprus	0.12
		Mexico	0.25	New Zealand	0.52	Madagascar	0.23	Turkey	0.12
		Dominican Republic	0.25	Netherlands	0.56	Sudan	0.28	Lebanon	0.12
		Uruguay	0.28	Finland	0.58	Mauritania	0.29	Tunisia	0.23
				Denmark	0.64	Comoros	0.35	Israel	0.25
				Sweden	0.64	Senegal	0.37		
				Norway	0.70	Central African Rep.	0.38		
						Niger	0.43		

Notes: Our measure of trust is calculated from the responses to generalized trust questions in the World Values Surveys, the Latinobarometer Surveys, the Asiabarometer Surveys, the Eurobarometer Surveys, the Asian Barometer Surveys, the Arabbarometer Surveys, and the Afrobarometer Surveys. In the World Values Survey, the question is worded as: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people? [1] Most people can be trusted. [2] Need to be very careful". In the Barometer Surveys, the question is: "Generally speaking, would you say that you can trust most people, or that you can never be too careful when dealing with others? [1] You can trust most people. [2] You can never be too careful when dealing with others". Countries are surveyed in different years ranging from 1981–2014. For each country, we aggregate all data sources and calculate a time-invariant measure, which is the fraction of respondents from a country that answer that most people can be trusted.

Table A.2: Summary Statistics

	(1) Mean	(2) Standard Deviation	(3) Minimum	(4) Maximum	(5) Observations
			Full Sample		
Trust	0.258	0.132	0.035	0.696	6611
I(Growth<global 10th percentile)	0.090	0.286	0	1	6611
Trust * I(Growth<global 10th percentile)	0.021	0.075	0	0.696	6611
Leader Turnover Indicator	0.178	0.382	0	1	6611
			Lagged democracies only		
Trust	0.285	0.155	0.035	0.696	3255
I(Growth<global 10th percentile)	0.054	0.226	0	1	3255
Trust * I(Growth<global 10th percentile)	0.013	0.063	0	0.696	3255
Leader Turnover Indicator	0.240	0.427	0	1	3255
			Lagged non-democracies only		
Trust	0.232	0.099	0.044	0.555	3351
I(Growth<global 10th percentile)	0.124	0.330	0	1	3351
Trust * I(Growth<global 10th percentile)	0.029	0.085	0	0.555	3351
Leader Turnover Indicator	0.117	0.322	0	1	3351

Notes: The table reports summary statistics for the primary variables of the analysis. The sample is that of our baseline regression, reported in Column (3) of Table 3. The unit of observation is the country-year.

Table A.3: Robustness to Additional Controls – Recession interacted with cultural variables

	Dependent Variable: Leader Turnover							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Controlling for the following cultural characteristics, interacted with the recession indicator:						
	Baseline	Self: Avoid Danger	Self: Take Risks	Self: Value Tradition	Child Qualities: Thrift	Child Qualities: Obedience	Locus of Control	Individualism
Mean of Dependent Variable	0.240	0.252	0.252	0.252	0.258	0.258	0.258	0.261
Trust x I(Growth	-0.558***	-0.859**	-0.596**	-0.571**	-0.682***	-0.809***	-0.758***	-0.720**
<global 10th percentile)	(0.210)	(0.402)	(0.241)	(0.244)	(0.250)	(0.295)	(0.219)	(0.322)
Observations	3,255	1,759	1,759	1,759	2,234	2,234	2,234	2,438
R-squared	0.181	0.231	0.233	0.231	0.212	0.212	0.213	0.199
Number of Clusters (Countries)	95	47	47	47	61	61	61	53

Notes: The sample is comprised of democratic country-year observations. Observations are at the country and year level. All regressions control for country fixed effects, year fixed effects, the uninteracted recession indicator variable, as well as the full set of baseline controls, which include: lag leader characteristics (the age of the leader in the current year, gender, the total number of days in office and the number of times she was previously in office), lag polity2, lag GDP, lag conflict incidence; the interaction of each variable with trust, and the interaction of each variable with the recession indicator variable. Standard errors are clustered at the country level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

The first six cultural traits are computed by taking the country average of a World Values Survey question. We use the individualism measure presented in Hofstede (2001). Self: Avoid Danger. “Living in secure surroundings is important to this person; to avoid anything that might be dangerous.” Self: Take Risks. “Adventure and taking risks are important to this person; to have an exciting life.” Self: Value Tradition. “Tradition is important to this person; to follow the customs handed down by one’s religion or family.” Child Qualities: Thrift. “Child value: Thrift, saving money and things” Child Qualities: Obedience. “Child value: Obedience” Locus of Control: "Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them."

Table A.4: Robustness to Additional Controls – Recession interacted with base year sector composition

	Dependent Variable: Leader Turnover								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Controlling for the following sector shares, measured in the country's initial year, interacted with the recession indicator:							
	Baseline	Agriculture	Mining	Manuf.	Construction	Retail	Transport.	Other	All sector shares
Mean of Dependent Variable	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
Trust x I(Growth	-0.558***	-0.561**	-0.561**	-0.572**	-0.547**	-0.595***	-0.574**	-0.550**	-0.556**
<global 10th percentile)	(0.210)	(0.216)	(0.217)	(0.218)	(0.235)	(0.221)	(0.221)	(0.221)	(0.262)
Observations	3,255	2,990	2,990	2,990	2,990	2,990	2,990	2,990	2,990
R-squared	0.181	0.186	0.186	0.186	0.186	0.187	0.186	0.186	0.187
Number of Clusters (Countries)	95	95	95	95	95	95	95	95	95

Notes: Observations are at the country and year level. Base year GDP shares are from 1970 and come from United Nations Statistics. All regressions control for country fixed effects, year fixed effects, the uninteracted recession indicator variable, as well as the full set of baseline controls, which include: lag leader characteristics (the age of the leader in the current year, gender, the total number of days in office and the number of times she was previously in office), lag polity2, lag GDP, lag conflict incidence; the interaction of each variable with trust, and the interaction of each leader demographic variable with the recession indicator variable. Sample restrictions are stated in the column headings. Standard errors are clustered at the country level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

Table A.5: Robustness to Additional Controls – Recession interacted with economic variables

	Dependent Variable: Leader Turnover									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Controlling for the following country characteristics, measured during the sample period, interacted with the recession indicator:								
		Real GDP		One-year real GDP growth		Unemployment rate		Trade intensity		
	Baseline	Mean	Annual variance	Mean	Annual variance	Mean	Annual variance	Mean	Annual variance	All controls
Mean of Dependent Variable	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240	0.240
Trust x I(Growth	-0.558***	-0.716***	-0.605**	-0.523**	-0.570**	-0.699***	-0.536*	-0.597***	-0.583***	-0.927**
<global 10th percentile)	(0.210)	(0.243)	(0.268)	(0.213)	(0.219)	(0.228)	(0.290)	(0.221)	(0.213)	(0.434)
Observations	3,255	3,255	3,255	3,255	3,255	3,132	3,027	3,228	3,225	2,170
R-squared	0.181	0.181	0.181	0.181	0.181	0.182	0.182	0.180	0.179	0.214
Number of Clusters (Countries)	95	95	95	95	95	95	95	95	95	95

Notes: Observations are at the country and year level. All regressions control for country fixed effects, year fixed effects, the uninteracted recession indicator variable, as well as the full set of baseline controls, which include: lag leader characteristics (the age of the leader in the current year, gender, the total number of days in office and the number of times she was previously in office), lag polity2, lag GDP, lag conflict incidence; the interaction of each leader demographic variable with trust, and the interaction of each variable with the recession indicator variable. Sample restrictions are stated in the column headings. Standard errors are clustered at the country level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

Table A.6: Reliability and Representativeness of Trust Surveys

Barometer Surveys				**World Values Survey**			
Total country-years	330			Total country-years	225		
Unrepresentative countries	Years	Low Quality countries	Years	Unrepresentative countries	Years	Low Quality countries	Years
Bhutan	1	Benin	1	Argentina	2	Algeria	1
Bolivia	2	Botswana	2	Australia	2	Argentina	2
Brazil	3	Cape Verde	1	Bangladesh	1	Australia	1
Cambodia	2	Ghana	1	Belarus	1	Belarus	1
Colombia	3	Kenya	1	Canada	1	Brazil	1
Costa Rica	3	Lesotho	2	Chile	3	Chile	3
El Salvador	2	Madagascar	1	China	2	China	4
Guatemala	2	Malawi	2	Colombia	3	Colombia	3
Honduras	2	Mali	2	Cyprus	1	Czech Republic	1
India	2	Mozambique	1	Ecuador	1	El Salvador	1
Laos	2	Namibia	2	Egypt	1	Finland	1
Malaysia	2	Nigeria	2	El Salvador	1	Guatemala	1
Maldives	1	Senegal	1	Germany	1	India	3
Mongolia	1	South Africa	2	Guatemala	1	Indonesia	1
Myanmar	3	Tanzania	2	India	2	Iraq	1
Nepal	1	Uganda	2	Indonesia	1	Japan	1
Nicaragua	2	Zambia	2	Israel	1	Jordan	1
Panama	2	Zimbabwe	1	Italy	1	Mexico	2
Paraguay	3			Jordan	1	Moldova	1
Philippines	2			Kyrgyzstan	1	New Zealand	1
Singapore	2			Lebanon	1	Nigeria	3
South Korea	1			Mexico	1	Norway	1
Sri Lanka	2			Montenegro	1	Pakistan	1
Taiwan	1			Netherlands	1	Philippines	2
Uzbekistan	2			New Zealand	2	Poland	1
Vietnam	3			Nigeria	2	Russia	1
				Norway	2	Saudi Arabia	1
				Pakistan	1	Slovakia	1
				Peru	1	South Africa	2
				Philippines	2	South Korea	1
				Saudi Arabia	1	Spain	1
				Slovakia	1	Sweden	1
				Slovenia	2	Switzerland	1
				South Africa	2	Tanzania	1
				South Korea	2	Turkey	2
				Spain	2		
				Sweden	2		
				Taiwan	1		
				Tanzania	1		
				Thailand	1		
				Tunisia	1		
				Turkey	3		
				Uruguay	1		
				Uzbekistan	1		
				Venezuela	1		
				Vietnam	2		
Total	52	Total	28	Total	66	Total	51

Table A.7: Robustness to the Omission of Global Recession Years

	Dependent Variable: Leader Turnover					
	(1)	(2)	(3)	(4)	(5)	(6)
	Baseline	Omit 1975	Omit 1982	Omit 1991	Omit 2009	Omit 1975, 1982, 1991, 2009
Mean of Dependent Variable	0.240	0.241	0.239	0.241	0.241	0.241
Trust x I(Growth	-0.558***	-0.564***	-0.639***	-0.511**	-0.510*	-0.558**
<global 10th percentile)	(0.210)	(0.210)	(0.203)	(0.218)	(0.272)	(0.274)
Observations	3,255	3,222	3,218	3,202	3,168	3,045
R-squared	0.181	0.181	0.180	0.182	0.181	0.182
Number of Clusters (Countries)	95	95	95	95	95	95

Notes: The sample is comprised of democratic country-year observations. Global recession years defined by IMF Global Economic Outlook (2009). Observations are at the country and year level. The dependent variable is an indicator that equals one if there was a leader turnover in that country and year. Leader characteristics include the age of the leader in the current year, gender, the total number of days in office and the number of times he/she was previously in office. The standard errors are clustered at the country level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

Table A.8: European Sample

Country	System
Austria	Parliamentary
Belgium	Parliamentary
Bulgaria	Parliamentary
Croatia	Parliamentary
Czech Republic	Parliamentary
Denmark	Parliamentary
Estonia	Parliamentary
Finland	Parliamentary
France	Mixed
Germany	Parliamentary
Greece	Parliamentary
Hungary	Parliamentary
Ireland	Parliamentary
Italy	Parliamentary
Norway	Parliamentary
Portugal	Mixed
Romania	Parliamentary
Slovakia	Parliamentary
Spain	Parliamentary
Sweden	Parliamentary
Switzerland	Parliamentary
Turkey	Parliamentary
United Kingdom	Parliamentary

Table A.9: Trust, Recessions & Turnover in Europe – Robustness to the omission of outliers

	(1)	(2)
	Dependent Variable: Fraction of a region's votes for the presidential or parliamentary challenger	
	I(Growth<Europe 10th percentile)	I(Growth<Europe 5th percentile)
Mean of Dependent Variable	66.17	66.15
Trust x I(Growth	-68.64***	-68.65***
<global 10th percentile)	(9.557)	(14.40)
Observations	715	713
R-squared	0.941	0.935
Number of Clusters (Countries)	171	176

Notes: This table uses European election and trust data to test the main hypothesis. Observations are at the region and year level. All regressions control for region fixed effects, region fixed effects times incumbent party fixed effects, year fixed effects, the uninteracted recession indicator variable, as well as the lag country GDP. We also include the interaction of lag country GDP with trust and the interaction of each lag control variable with the recession indicator variable. Standard errors are clustered at the county level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.

Table A.10: Trust, Recessions & Turnover in the U.S. – Robustness to the omission of outliers

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent Variable: Percent of a county's votes for the presidential challenger							
	FRED recession measure				NBER recession measure			
	All counties		Counties with trust variable based on N>10		All counties		Counties with trust variable based on N>10	
Mean of Dependent Variable	0.462	0.461	0.456	0.456	0.460	0.459	0.454	0.453
Trust x Recession Indicator	-0.00875***	-0.00627***	-0.0361***	-0.0239**	-0.0150***	-0.00465**	-0.0508***	-0.0111
	(0.00223)	(0.00205)	(0.0100)	(0.00948)	(0.00250)	(0.00217)	(0.0113)	(0.0106)
Controls:								
Region FE x Year FE	N	Y	N	Y	N	Y	N	Y
Observations	19,793	19,811	4,950	4,932	21,510	21,516	5,372	5,353
R-squared	0.873	0.904	0.857	0.891	0.853	0.885	0.837	0.871
Number of Clusters (Counties)	1665	1665	415	415	1665	1665	415	415

Notes: This table uses United States election and trust data to test the main hypothesis. Observations are at the county and year level. All regressions control for county fixed effects, county fixed effects times incumbent party fixed effects, year fixed effects, the uninteracted recession indicator variable, as well as the full set of baseline controls, which include: lag leader characteristics (the age of the president when he entered office and the number of times he was previously in office), lag state GDP, lag United States GDP. We also include the interaction of each lag control variable with trust and the interaction of each lag control variable with the recession indicator variable. Standard errors are clustered at the county level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% level.