Who values democracy?*

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Abstract

I show democratizations have a large, negative impact on asset valuations driven by a rise in redistribution risk. Across 90 countries over 200 years, risk premia are substantially elevated in democratizations, similar in magnitude to financial crises. Using a shift in Catholic church doctrine in support of democracy, I provide causal evidence that democratization increases risk premia. Successful democratizations lead to substantial redistribution: the size of the public sector grows, income inequality falls, and the labor share of income rises. A model of asset prices and political regimes in which wealthy asset market participants face redistribution risk in democratizations can quantitatively explain these effects. The model also explains the negligible asset pricing response to autocratizations. Neither an increase in macroeconomic risk nor generic political risk can explain the results.

Keywords: Risk Premia, Democratization, Inequality, Redistribution, Catholic Church
JEL codes: G10, G15, G18, N40, P16

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1 Introduction

Over half of all countries have transitioned to democracy over the past 200 years. When successful, democratizations bring large changes to political institutions such as voting rights, fair elections, and rights to free expression. They also bring redistribution, more transparent institutions, and greater economic competition (Boix, 2003, Aghion, Akcigit and Howitt, 2014, Acemoglu, Naidu, Restrepo and Robinson, 2015). These changes affect firms and investors alike. How do financial markets respond when democratization becomes more likely? Using a panel dataset that covers 90 countries over 200 years, I show that asset valuations fall when permanent transitions to democracy are more likely. This is because investors demand a higher risk premium due to the risk of large-scale redistribution of political and economic power. In the data, I document that this increase is similar in magnitude to what we observe in financial crises, suggesting that these periods are associated with increased systematic risk to investors.

What drives this large increase in risk premia? One possible explanation would be an increase in macroeconomic risk. However, this is not born out in the data. GDP or aggregate dividend growth do not fall in the 5 years after a democratization starts, nor do the distributions of GDP or aggregate consumption growth visibly change. A rise in generic political risk cannot fully explain the results either. Other periods of high political risk such as political crises and autocratizations—transitions from democracy to autocracy—exhibit substantially smaller increases in risk premia when compared to democratizations.

My paper proposes an alternative mechanism: redistribution risk. First, in the data, I compare successful and failed democratizations and find evidence that transitions to democracy come with substantial redistribution. After a successful transition, the size of the public sector grows, income inequality falls, and the labor share of income rises. Second, I propose a model of democratic transitions embedded within a standard asset pricing model to understand if this redistribution is quantitatively large enough to explain the asset pricing results. When calibrated to reasonable parameters from the asset pricing literature and to match the redistribution in the data, the model can explain two-thirds of the rise in dividend yields observed during democratizations.

In the first part of the paper, I document that democratizations come with increased risk premia across several proxies. Of course, democratizations do not occur randomly and could be endogenous to economic conditions. Nonetheless, I show democratizations increase risk premia using two identification strategies. The first strategy uses exogenous variation in the probability of a successful democratization emanating from a shift in Catholic church doctrine in favor of democracy

during the papacy of John XXIII from 1959 to 1963. This shift particularly impacted majority Catholic autocracies. Huntington (1991) labels the shift as one of the main reasons the third wave of democratization of the 1970s, 1980s, and early 1990s occurred and why it was concentrated in majority Catholic autocracies. Consistent with this narrative, I show that indices denoting the threat to the governing regime posed by civil society organizations and the size and frequency of democratic protests rose dramatically in majority Catholic autocracies compared to non-Catholic autocracies. This indicates that the doctrinal shift materially changed political realities on the ground in majority Catholic autocracies.

Using a difference-in-differences approach, this quasi-natural experiment is associated with a 4.9 to 11.1 percentage point increase in average excess returns for majority Catholic autocracies depending on the specification. The results display no pre-trends and are robust to various sample windows, the exclusion of outliers, and different estimation techniques. These results cement the link between an increase in risk premia and an increase in the probability of a successful democratic transition.

The second identification strategy follows Acemoglu, Naidu, Restrepo and Robinson (2019) and uses regional waves of democratization as exogenous variation in the likelihood of a successful democratization. Democratizations that occur in the middle of regional waves are more likely to be driven by external pressure and are therefore exogenous to the local macroeconomic conditions of a particular country. These democratizations see a larger increase in dividend yields consistent with endogeneity biasing the results downward.

The second part of the paper investigates the mechanism driving the increase in risk premia: a rise in redistribution risk. Comparing successful and failed democratizations, I find that democratization redistributes resources in two ways. First, it increases explicit redistribution by raising the size of the public sector and lowering income inequality. In total, these results point to, on average, a 4.8 percentage point rise in the size of the public sector, a 2.3 percentage point decline in Gini coefficients, and a 6.7 percentage point rise in the labor share of GDP in the 20 years after a successful democratization.[1] Second, it also increases tacit redistribution. For example, autocracies allocate a greater share of government spending to elites (Tullock, 1986). They also provide more protection to incumbent firms from new entrants (Martinez-Bravo and Wantchekon,

[1]These results are also consistent with previous findings by Acemoglu et al. (2015), who find that tax revenues-to-GDP ratios rise by as much as 25 percent on average after democratizations, and Drautzburg, Fernández-Villaverde and Guerron-Quintana (2022), who find that the capital share falls by 2.3 percentage points in the three years after a democratic transition.

2021). I find that, during successful democratizations, bribery and corruption indices fall while pro-competitive regulation and net entry of new firms rise. Since this also redistributes resources away from autocratic elites, it could also play an important role in the asset pricing results.

To understand whether the redistribution in the data is quantitatively large enough to explain the asset pricing results, I calibrate a model of democratic transitions in the style of Acemoglu and Robinson (2006) embedded within a standard asset pricing framework. The economy starts in autocracy in which the elites are the only financial market participants, have all the political power, and try to avoid redistributing their income to the more numerous poor citizens. The citizens influence the policies of the elites by threatening to revolt. Revolution is costly: all the elites are killed and a fraction of resources are destroyed, making it an undesirable state for both sides. When the fraction of resources destroyed is low enough, however, the citizens may prefer the revolution to their lives in autocracy. This cost the citizens bear from revolution, along with the revolutionary threat the elites face, varies over time. In equilibrium, the revolution never occurs because the elites institute temporary income redistribution through taxes and transfers.

However, when the revolutionary threat is great enough, temporary transfers are no longer enough. Faced with the threat of revolution, the elites would like to promise future redistribution, but such promises are not credible. The elites face a commitment problem: as long as they retain political power they cannot credibly commit to future transfers in the state of the world where there is little or no revolutionary threat. In this case, only conceding democracy can keep the revolution off the equilibrium path, as democracy acts as a mechanism for the elites to credibly commit to future redistribution. While democracy is a much better state for the elites than the revolution, the redistribution it brings is costly, making it, nonetheless, a deleterious state for the elites.

Democratization, in the model, is a state where a permanent transition to democracy becomes more likely. Since the elites price assets, uncertainty over whether a democratization will succeed—ushering democracy and redistribution—or fail—keeping society in autocracy—increases the risk to elite's future consumption, causing risk premia to rise. In this way, the consolidation of democracy and the redistribution of income and political power it brings, acts as a rare and disastrous outcome for the elites, explaining the increased risk premia observed during democratizations in the data (Rietz, 1988, Barro, 2006, Gabaix, 2012, Wachter, 2013). When calibrated to reasonable preference parameters and the explicit redistribution observed in the data, the model can explain 65% of the rise in dividend yields observed during democratizations. Several extensions to the model are then proposed to better understand the role that tacit redistribution

plays in explaining the remaining portion.

Finally, the model can also explain the negligible asset pricing effect observed in autocratizations. In this extension, the elites have the ability to attempt to reverse democracy, but face a permanent loss of a fraction of their consumption if they fail. The key insight is that while democratization is a risk imposed on the elites, autocratization is a risk taken by the elites, which leads to an asymmetric effect on asset prices. At the point where the Elites are exactly indifferent between attempting an autocratization and accepting democracy, the consumption-wealth ratio is identical across states. The dividend yield is a levered claim to consumption, however, and increases slightly as the increased risk in the event of a failed autocratization matters more than the higher payoff upon success. This also leads autocratizations with a higher potential payoff to come with a larger rise in dividend yields, as the elites endogenously take more risk to achieve autocracy.

Taken together, these results provide a new mechanism for why risk premia vary over time: politically motivated redistribution shocks that primarily affect wealthy asset market participants. Spikes in risk premia coming through this channel give insight into the barriers that countries face during the democratization process, particularly true for developing and autocratic societies where economic and political inequalities are far greater. Better understanding these frictions is important for the many countries still living under autocratic political institutions.

These results are also relevant for the remaining 55% of democratic countries. Over the last four decades, the developed world has experienced a sharp rise in pre-tax income and financial wealth inequality (Auten and Splinter, 2019, Smith, Zidar and Zwick, 2020). The evidence from democratizations suggests that in curtailing wealth and income inequality through redistribution, countries may face elevated risk in the short run.

Finally, the results also speak to the financial market effects of declines in democratic institutions across the globe over the last decade. Insofar as the move away from democracy is accompanied by lower taxes, higher inequality, lower labor bargaining power, and decreased economic competition, the results in this paper provide a model through which future autocratic movements can be interpreted.

Related Literature This paper advances both the asset pricing literature focused on rare events and political and policy risk, and the political economy literature around the democratization process. It contributes to the literature focusing on the impact of rare events on asset prices from Rietz (1988), Barro (2006), Gabaix (2012), and Wachter (2013) by noting that left-skewed distributional shocks—from the perspective of wealthy market participants—can also drive asset prices. This

circumvents, to some extent, the critique that aggregate rare events are not common enough or do not see the necessary impact on asset prices sometimes levied against this class of models (Muir, 2017).

This paper also builds on a literature examining the role of political and policy risk in asset pricing by noting that democratizations are accompanied by large increases in risk premia. Pástor and Veronesi (2012, 2013) propose a model in which government policy uncertainty drive variation in the risk premium. Pástor and Veronesi (2016) model the effect of redistributive taxation on inequality jointly with the effect on aggregate productivity and asset prices. Pástor and Veronesi (2021) examines how rising consumption inequality can influence to move toward populism even in a strong economy in a model in which agents are inequality averse. My paper builds on these papers by studying redistribution shocks explicitly in the context of democratizations and studying their quantitative impact on asset prices.

Empirical research on policy shocks and uncertainty has focused mostly on quantifying the affects of policy shocks in developed democracies. For example, Baker, Bloom and Davis (2016) develop an index of economic policy uncertainty and find that increases in this index are associated with greater stock price volatility and reduced investment and employment. Kelly, Pástor and Veronesi (2016) provide empirical support that political uncertainty is priced in the equity options market. My paper differs from these by studying uncertainty over political institutions rather than over particular policy decisions. As such my work complements this body of research, showing that uncertainty over the institutions is also priced in financial markets.

My primary contributions to the political economy and democratization literature, are twofold. The first is theoretical: By adding asset prices to the seminal model in Acemoglu and Robinson (2006), this paper shows that increases in risk premia are consistent with increases in the redistribution risk faced by autocratic elites during periods of democratization. This provides a prediction through which redistributive models of democratizations can be tested (Boix, 2003, Acemoglu and Robinson, 2006). Moreover, by providing a theoretical link between asset prices and future redistribution in the event of a successful democratization, the model can also assess whether the redistribution observed in the data is quantitatively large enough to explain the rise in premia. In this way, the model can help clear a significant hurdle in this literature, namely, provide an understanding of whether the redistribution faced by the wealthy in autocracy is large enough to constitute a substantial friction to democratic transitions.

The second is empirical; the paper provides the first evidence of the effects of democratizations

on equity markets. Prior research examining the asset pricing impact of democratizations has focused on the impact on sovereign debt yields in the pre-World War I sample. Consistent with my results, it has found that democratizations increase sovereign loan yields (Dasgupta and Ziblatt, 2021, Tunçer and Weller, 2022). Conversely, Delis, Hasan and Ongena (2020) study corporate loan spreads from 1984–2014 and find that successful transitions to democracy are accompanied by reduced loan spreads for companies. These positive effects after transitions are not inconsistent with increased risk during the transition period, which this paper documents. My paper builds on this body of research by studying equity markets and providing the longest time series and widest panel to date to study the asset pricing impact of democratizations.

In addition to new empirical evidence on asset prices, the paper also provides a novel exercise to quantify the amount of redistribution after successful democratizations by comparing them to failed democratizations. As such, the paper compares two groups of countries that underwent a similar period of political change, but where one group experiences a sustained change and the other does not. These results, therefore, add to those reported in Acemoglu, Naidu, Restrepo and Robinson (2015) and Drautzburg, Fernández-Villaverde and Guerron-Quintana (2022) who measure the impact of democracy on the size of the public sector and the labor share of income.

2 Data

The empirical analyses performed below rely on several databases. Here, I describe the data employed in this project and the construction of all the variables of interest.

Asset market data Equity data come from Global Financial Data (GFD), the Jorda-Schularik-Taylor Macrohistory Database (JST) used in Jorda, Knoll, Kuvshinov, Schularick and Taylor (2019), IBES Global, and Factset. GFD provides two main historical stock return indices for each country: the first is the aggregate return on stock exchanges within the country, and the second is the aggregate return of all companies headquartered in the country and listed on the London Stock Exchange. The JST data covers 17 developed countries from 1870 to 2016. To aggregate the data, I fill in the GFD home stock market series first with the JST data and then with IBES Global, Factset, and the GFD data coming from the London Stock Exchange. This is done for all equity rate variables, such as rates of return or dividend growth, or changes in level variables like changes in dividend yields. Combining these data sources yields an unbalanced panel data set of ex- and cum-dividend returns, dividend yields, and dividend growth that cover the longest time series possible for each country; for example, the data on changes in dividend yields span 201 years across

90 countries, with an average of 65 years of data per country. However, due to different coverage for each series, the observation counts differ throughout the paper. For more information on how the asset pricing series are constructed, see Appendix A, and for the series mnemonics and sources for all of the data used for each country, see the Supplemental Appendix.

Political institutions data Data on political institutions come from the Varieties of Democracy (V-Dem) database.[2] V-Dem uses a team of over 3,500 country-specific experts to quantify levels of and trends in historical political institutions for every country over the last two centuries, providing the most detailed dataset possible to analyze changes in political institutions. In particular, V-Dem constructs indices ranking the level of electoral democratic institutions in every country, which is important for mapping data to theory, as changes in electoral institutions map most closely to the changes in institutions that occur in the model presented in Section 6. V-Dem also provides measures on various political outcomes not immediately related to democratic political institutions, but nonetheless useful for understanding the democratization process, such as the level and frequency of democratic protests, political violence, political polarization, and civil society activity. For more information on the construction of these measures see Coppedge et al. (2020).

Macroeconomic, government spending, and inequality data Data on real GDP come from Maddison Historical Statistics, who use and expand upon data from Barro and Ursua (2008) and provide the most comprehensive data available on these variables. Data on real consumption, the labor share of income, investment, the capital stock, and human capital are available from 1945 to the present from the Penn World Tables. Data on income inequality come from the Standardized World Income Inequality Database (SWIID) who provide data on the Gini coefficient for up to 155 countries from 1961–2018. Finally, data on government revenue-GDP ratios come from GFD and data on tax revenue-GDP ratios come from the Relative Political Capacity Dataset.

Events data A variety of events data are also collected and primarily used as controls in the regressions below to assure that any variation the proxies for risk premia observed in democratizations are not driven by adverse macroeconomic, political, or financial events. Data on financial crises come from JST and Reinhart and Rogoff (2009) and are combined into a single financial crisis variable.[3] Data on sovereign defaults from Reinhart and Rogoff (2009) and data on recessions come from the GFD Dates database, which compiles events throughout history on various

[2]This paper uses version 10.0 of the data.

[3]These datasets use a narrative approach in constructing historical financial crises, often looking at large-scale bank runs or asset market failures, and are used extensively by other scholars.

topics. Data on the years in which wars occur and their location come from the Correlates of War (CoW) data. From the CoW dataset, I also obtain country-level data on religious demographics from 1945–2010. Data on political crises come from the International Crisis Behavior (ICB) database as used in Berkman, Jacobsen and Lee (2011). Data on head of government and head of state deaths come from V-Dem and are supplemented with data from Wikipedia. Data on head of government and head of state attempted and successful assassination attempts come from Jones and Olken (2009).

2.1 Democratizations

Data on democratization periods primarily come from the Episodes of Regime Transformation (ERT)[4] data produced by V-Dem. This newly created dataset is the only dataset to my knowledge that provides full coverage of democratization (and autocratization) episodes. Since asset prices are forward looking, it is important to use data on democratizations that provide coverage over the full episode and not just the year transition. Importantly, the ERT data locates the start year of the democratization even if it is prior to the actual year of regime change. The ERT data locates democratic transitions by changes in V-Dem's electoral democracy index, which measures countries on a continuous scale from 0 to 1 according to how closely they resemble the principle of electoral democracy. This is measured by assessing to what extent the government respects principles of freedom of expression and association, the proportion of the population that can vote, and whether elections are competitive, clean, and fair.

Since the asset pricing data are available prior to 1900, I extend the ERT data to back to 1816, using the same procedure V-Dem uses to construct the post-1900 sample. This produces 10 additional democratization episodes. Finally, to obtain the latest possible end date for each democratization episode, I use data from Lindberg et al. (2018) to extend democratization episodes to their latest possible year.[5] In total, these data constitute 851 democratization years across 85 episodes from 1816–2018 for which I have dividend yield data.

Moreover, and in contrast to other sources, the ERT and Lindberg et al. data also provide detail on whether a democratization is sustained or quickly reverts back to autocracy. For simplicity, I refer to these two different potential outcomes as either "success" or "failure." These data allow me to assess the different outcomes for countries with successful versus failed democratizations.

More information on the process of how the ERT data identifies democratizations and deter-

[4]This paper uses version 2.2 of the data.

[5]Lindberg et al. (2018) follows a similar procedure to the ERT data, but with less conservative conditions on what constitutes the end of a democratization episode.

mines if they are successful or failed is described in detail in Appendix A. Further, a list and event timeline of all democratizations used for the asset pricing results is provided in Appendix Table G.19. Finally, Appendix F provides two case studies of democratization episodes that go through the history, asset pricing response, and subsequent redistribution (or lack thereof) of the successful democratization in Sweden from 1917–1924 and the failed democratization in France from 1847–1848.

3 Democratizations and risk premia

This section presents the stylized fact that risk premia rise during democratizations evidenced by a rise in dividend yields and other proxies for the change in the risk premium. I then present evidence that neither macroeconomic risk nor generic political risk are driving this result, and that potential selection effects seem to, if anything, bias the results downward.

3.1 Risk premia during democratizations

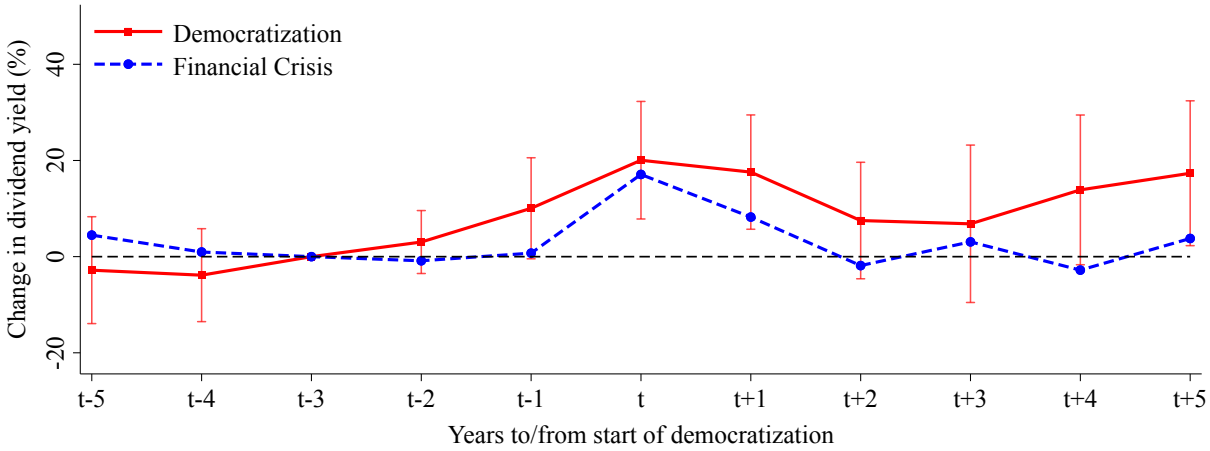
Following Muir (2017), I use the change in the log dividend yield as a proxy for the change in the equity premium. The change in the dividend yield corresponds to the percent change in the discount rate (risk premium plus the riskfree rate), provided there are no changes to expected cash flows.

Fluctuations in expected cashflows could either increase or decrease estimates of the risk premium derived from changes in the dividend yield. If dividends fall but investors expect them to rebound quickly, the change in log dividend yield could mask an increase in risk premia. Permanent shocks to expected cash flow growth, conversely, would increase the dividend yield independent of a higher risk premium. To ensure the former is not a concern, I omit democratizations that start in sovereign defaults or in countries engaged in a war on their own continent. As discussed in Appendix B.1, democratizations that begin during nearby wars or sovereign defaults are connected with substantial dividend declines that rapidly recover. To assure the latter is not a concern, I provide evidence below that the remaining democratizations are not associated with large effects on expected cash flow growth in the next subsection.

The magnitude of the shift in dividend yields is nicely summarized by Figure 1, which presents an event study of log dividend yields around democratization starts benchmarked to their value 3 years prior. Using the value at $t-3$ as the comparison value allows for the possibility that financial markets react to democratizations prior to when political scientists code the events as started. This seems to be the case as dividend yields begin to rise starting 2 years prior to the start

Figure 1: Change in log dividend yields in democratizations

This figure presents an event study of log dividend yields around democratization and a financial crisis start years. Estimates are relative to the value three years prior to the event start to allow for the possibility that financial markets incorporate information about the events early. Endpoints (not shown) are binned. The red bars on the democratization line represents a 90% confidence interval of the point estimates with standard errors clustered by country and year.



of the democratization.

To show the economic magnitude of the increase in dividend yields, the point estimates for an event study around financial crises—which Muir (2017) notes are accompanied by large increases in risk premia—are also plotted. The headline result is clear: democratizations come with large and economically significant increases in dividend yields, of the same order of magnitude as what are observed in financial crises. Moreover, we can see that dividend yields remain elevated as far as five-years after the democratization start.

Table 1 breaks the result down further, showing the 5-year change in log dividend yields at the start of democratizations. Column (1) presents the results: dividend yields rise substantially in the five-years leading up to a democratization. This means that, in the absence of changes to expected cashflows, the results can be interpreted as an average rise in discount rates of 17.9% over 5 years. To assure other events beside democratizations are not driving the results, all regressions include indicators for other events that may impact dividend yields such as financial crises, recessions, interstate wars, head of government deaths, sovereign defaults, coups d'etat, and attempted assassinations, and the level of military activation of a country. Further, to account for the fact that shocks to dividend yields within a year are correlated across countries, and that changes in divi-

Table 1: Democratizations and changes in log dividend yields

This table presents regressions of the 5-year change in log dividend yields on indicator variables representing the start of a democratization. The specification estimated is

$$dp_{c,t} - dp_{c,t-5} = \alpha + \beta \mathbb{1}_{c,t}\{\text{Democratization Start Year}\} + \epsilon_{c,t}$$

where dp is the log dividend yield and α represents either the coefficient on a vector of ones or the fixed effects denoted at the bottom of the table. Standard errors are clustered by country and year. All coefficients have been multiplied by 100 for presentation, and standard errors are in parentheses. The same results for financial crises are included for purpose of comparison. In Columns (3) and (4) some observations are lost due to there only being one observation in a region-year or in a continent-regime-year. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable:	Five-year change in log dividend yields			
	(1)	(2)	(3)	(4)
Democratization start	17.95***	19.76***	23.12***	26.32***
	(5.74)	(5.78)	(6.89)	(8.10)
Financial crisis start	13.71***	16.27***	10.43*	11.46*
	(5.11)	(4.29)	(5.51)	(6.40)
Country FE	No	Yes	Yes	Yes
Year FE	No	Yes	No	No
Region × Year FE	No	No	Yes	No
Continent × Regime × Year FE	No	No	No	Yes
Event Controls	Yes	Yes	Yes	Yes
Episode obs.	64	64	63	60
R^2	0.01	0.15	0.35	0.34
Observations	6,040	6,040	5,663	5,813

dend yields are correlated over time within a country, standard errors are clustered at the country and year level in all columns.

However, countries that experience democratizations may also see larger average changes in dividend yields in general, and democratizations may occur in years in which many countries experience a rise in dividend yields. For this reason, country and year fixed effects are included in Column (2). The results are essentially unchanged: the point estimates imply an average increase in risk premia of 19.8% increase in dividend yields over 5 years and remain significant at the 1% level.

Column (3) introduces more specificity by adding geopolitical region-by-year fixed effects where the region designation is defined as in Teorell et al. (2022). Adding these fixed effects compares the rise in dividend yields observed in the democratizing country to their regional neighbors, assuring that the results are not driven by common regional increases in dividend yields. Simi-

larly, Column (4) adds lagged regime type-by-continent-by-year fixed effects, which compares the rise in dividend yields in the democratizing country to those in same continent and with the same regime type in the previous year (e.g. autocracy or democracy). The previous year regime type is used because the regime type sometimes changes at the start of the democratization. Both of these specifications yield similar results with dividend yields rising by 23.1% and 26.3%, respectively, with both significant at the 1% level.

Robustness Appendix B provides various robustness checks on the rise in dividend yields at the beginning of democratizations. First, Appendix B.2 shows that the results hold across a broad range of other methods for determining a democratization start. The section first presents various methods of determining a jump in electoral democratic political institutions using the V-Dem data, and shows that 5 different methodologies yield very similar results. Of note is that observation that a broad class of democratic jumps show marked increases in dividend yields, though of smaller magnitudes than what are observed in the ERT data.

The section also presents the results for the democratic transitions used in Acemoglu et al. (2019), who combine Polity and Freedom House data with other sources to ascertain democratic transitions. These data cover the period 1960–2010. To extend the data to cover my entire asset pricing sample, I use consensus regime transitions between Polity and V-Dem from 1816–1959 following a similar procedure to Acemoglu et al. which is detailed in Appendix B.2. This procedure produces 32 democratization events for which asset pricing data are available and the results are quantitatively similar to those shown in Table 1.

Appendix B.3 presents alternative estimators for the change in log dividend yields and Appendix B.4 alternative standard errors. Table B.5 presents shorter differences in dividend yields such as the 1-year, 2-year, 3-year, and 4-year change in the log dividend yield and the results still point to a strong and statistically significant increase in dividend yields. Table B.6 also presents evidence that the level of dividend yields is significantly elevated not just relative to prior values of the dividend yield for that country, but relative to all country-year observations in the sample, as well. To account for the possibility that dividend yields reach their high point after the democratization start, Table B.7 presents results using to "peak-to-trough" style measures, one that subtracts the maximum dividend yield in 3 years prior to the democratization start or the 5 years after the democratization start from the minimum dividend yield from 4 to 8 years prior to the democratization start, and one that takes the maximum 5 year change in log dividend yields from two years prior to two years after the democratization start. Both measures provide a similar conclusion as

those shown above. Finally, Figure B.1 shows that the increase in dividend yields in democratizations are almost entirely driven by price declines, in particular, a 23.0% decline over 5 years at the trough.

In the results presented above, all standard errors are clustered at the country and year level. However, clustering in this way may not fully account for the autocorrelation structure induced by overlapping observations by using the 5-year changes in log dividend yields. To assure the results are robust, Appendix B.4 also presents the results using Driscoll-Kraay standard errors, clustered at the year level. The results are still significant at the 1% level.

Additional evidence that other proxies for the change in the risk premium are elevated are presented in the remaining sections of Appendix B. First, vector-autoregression decomposed discount rate shocks, using methods from Campbell (1991), indicate that discount rate shocks are focused around democratization starts, with a cumulative shock of around 3.7–5.8 percentage points, as shown in Appendix B.5. Second, Section B.6 shows that an additional measure of market risk, equity volatility, is elevated at the start of democratizations, with an event study plot showing that it reaches it's peak 5-years after the democratizations start. Third, Appendix B.7 shows that corporate bonds yields are also significantly elevated—increasing by 10.9–20.0% over 5-years—during democratizations in the 11 democratization episodes for which I have data.

3.2 Ruling out macroeconomic risk and general political risk

The previous section presents robust evidence that dividend yields are elevated during periods of democratization which I attribute to an increase in risk premia due to democratizations. This interpretation has a couple of potential issues. First, increased dividend yields could be driven by lower expectations of cashflow growth. Second, other sources of risk that are potentially correlated with democratizations, such as macroeconomic risk or general political risk, could be driving the results. As such, it is important to rule out these potential channels as explanations for the results shown above, a task upon which I endeavor in this section.

Macroeconomic risk As mentioned above, the change in the log dividend yield is a valid proxy for the change in the risk premium if expected growth remains relatively constant. Table 2 presents evidence that this is the case. Columns (1)-(3) show that growth in log GDP per capita is flat in the 5 years after the start of a democratization.[6] Once again, to compare economic magnitudes, the

[6]Prior work has noted that democratizations tend to arrive around periods of low growth (Acemoglu, Johnson, Robinson and Yared, 2008, Bruckner and Ciccone, 2011, Acemoglu, Naidu, Restrepo and Robinson, 2019). This is almost entirely driven by democratizations that occur in countries engaged in a war on their own continent or that have defaulted on their external debt, which I have excluded here to keep these results comparable with the results on

Table 2: Democratizations, growth, and cash flows

This table presents regressions of log GDP per capita and dividend growth on indicator variables denoting if the year is in the first 5 years of a democratization. The regressions estimated take the form

$$\text{Cash Flow Growth}_{c,t} = \alpha + \beta \mathbb{1}_{c,t}\{\text{First 5 years of Democratization}\} + \epsilon_{c,t}$$

where α represents either the coefficient on a vector of ones or the fixed effects denoted at the bottom of the table. Standard errors are clustered by country and year. All coefficients have been multiplied by 100 for presentation, and standard errors are in parentheses. The same results for financial crises are included for purpose of comparison. In Columns (3) and (6) some observations are lost due to there only being one observation in a region-year. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable:	Log GDP per capita growth			Log dividend growth		
	(1)	(2)	(3)	(4)	(5)	(6)
Democratization, 5-years	0.12	0.04	0.10	-1.62	-1.35	0.58
	(0.31)	(0.30)	(0.31)	(1.70)	(1.68)	(1.47)
Financial Crisis, 5-years	-0.77***	-0.70***	-0.22	-6.20***	-7.34***	-6.29***
	(0.25)	(0.23)	(0.21)	(1.85)	(1.62)	(1.71)
Country FE	No	Yes	Yes	No	Yes	Yes
Year FE	No	Yes	No	No	Yes	No
Region × Year FE	No	No	Yes	No	No	Yes
Event Controls	Yes	Yes	Yes	Yes	Yes	Yes
Episode obs.	1210	1210	1205	359	359	354
R^2	0.02	0.11	0.23	0.01	0.13	0.30
Observations	18,222	18,222	18,017	6,051	6,051	5,563

effect in the 5 years after the start of a financial crises on log GDP per capita is also reported. In the specifications with either no fixed effects or country and year fixed effects growth is significantly negative during and after financial crises. When country fixed effects and region-year fixed effects are included, the effect size is substantially reduced and statistically indistinguishable from 0.

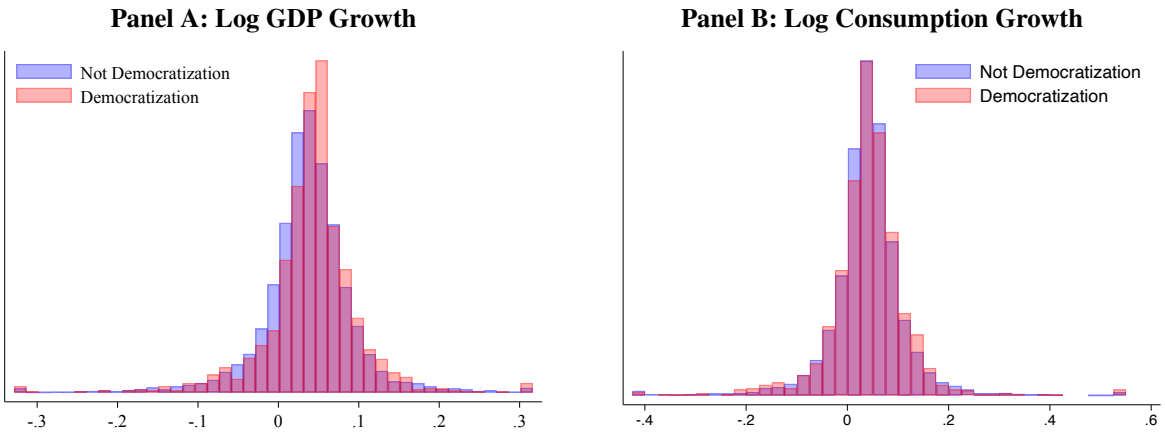
Realized dividend growth in democratizations does see a negative point estimate, but none are statistically different than 0, as shown in Columns (4)-(6). Realized dividend growth is, conversely, significantly negative during and after financial crises in all specifications. Overall, the results in Table 2 show that the change in the log dividend yield is a valid proxy for the change in the risk premium in the case of democratizations.

The increase in risk premia combined with no significant effects on average realized cash flows presents challenges for theories based on declines in aggregate consumption to explain these facts. Indeed, as shown in Table 2, the entire distribution of log GDP growth and log consumption growth

dividend yields.

Figure 2: Distribution of GDP and consumption in democratizations

Log GDP and consumption growth are winsorized at the 0.25% and 99.75% level. GDP data come from the Maddison Historical Statistics database. Consumption data come from the Penn World Tables and represent the period from 1945 to 2018.



is either shifted toward higher growth during democratizations or unaffected, as shown in Figure 2. It does not seem as though an increase in aggregate macroeconomic risk can explain the higher risk premia observed in democratizations.

Political risk While democratizations come with an increase in political risk, a natural question is whether the increased dividend yields observed in democratizations are *solely* a consequence of political risk. This is akin to asking if similar increases in dividend yields are observed in other events where political risk is high. To test this, I examine whether ICB political crises[7] and autocratizations in the ERT data display similarly large increases in dividend yields, as both these events display high levels of political risk, but without the same potential for a transition to democracy.

Table 3 presents the results for the 5-year change in the log-dividend yield at the beginning of these two episode alongside estimates for democratizations from the period 1918 the present, the period over which the ICB crisis data are available. In all specifications, both ICB political crises and autocratizations display dividend yield changes in the same direction as in democratizations, but democratizations display a larger rise in dividend yields. To assess whether these point

[7] In these regressions, I code ICB political crises that occur during democratization episodes as a 0 to more clearly identify the affect of general political risk on dividend yields.

Table 3: General political risk and dividend yields

This table presents regressions of the 5-year change in log dividend yields on indicator variables representing the start of a democratization, International Crisis Behavior (ICB) political crisis, and autocratization. Data are reported from 1918 when the ICB crisis data begin. The specification estimated is

$$dp_{c,t} - dp_{c,t-5} = \alpha + \beta \mathbb{1}_{c,t}\{\text{Event Start Year}\} + \epsilon_{c,t}$$

where dp is the log dividend yield and α represents either the coefficient on a vector of ones or the fixed effects denoted at the bottom of the table. Standard errors are clustered by country and year. All coefficients have been multiplied by 100 for presentation, and standard errors are in parentheses. In Columns (3) and (4) some observations are lost due to there only being one observation in a region-year or in a continent-regime-year. The bottom of table presents the p-value of two F-tests testing the null hypothesis that the change in dividend yields in democratizations is the same as in ICB crises or autocratizations. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable:	Five-year change in log dividend yields			
	(1)	(2)	(3)	(4)
Democratization start	20.42***	26.62***	29.80***	32.52***
	(7.19)	(6.70)	(8.01)	(9.64)
ICB crisis start	14.39	11.58	11.52	5.35
	(9.47)	(9.18)	(7.47)	(6.95)
Autocratization start	7.93	7.82	2.77	2.60
	(7.88)	(7.38)	(7.63)	(8.00)
Country FE	No	Yes	Yes	Yes
Year FE	No	Yes	No	No
Region × Year FE	No	No	Yes	No
Continent × Regime × Year FE	No	No	No	Yes
Event Controls	Yes	Yes	Yes	Yes
Episode obs.	48	48	47	46
Democratization vs ICB Crisis (p-value)	.583	.135	.068	.012
Democratization vs Autocratization (p-value)	.249	.055	.021	.02
R^2	0.02	0.17	0.37	0.35
Observations	4,112	4,112	3,959	4,047

estimates are statistically different, Table 3 also reports the p-values for two F-tests performed under the null hypothesis that the coefficients for democratizations and ICB crisis and democratizations and autocratizations are identical. These tests reveal that once regional-by-year variation in dividend yields are taken into account, democratizations display statistically larger increases in dividend yields than either event. This signifies that there is indeed something special about democratizations above and beyond a generic increase in political risk.

Robustness Appendix B.8 presents robustness checks on the results relating to macroeconomic risk. First, the results above on GDP per capita growth use all data available from the Maddison

Historical Statistics. However, one may wonder if the results are similar in the subset of countries with data on dividend yields, which is more directly comparable to the results in Section 3.1. Table B.11 shows that the results are indeed similar in this subsample.

Second, the section presents event study plots for both GDP per capita and dividend growth. GDP per capita declines slightly in the three years leading up to a democratization, but is not statistically different than a zero effect. Moreover, most of the decline in GDP per capita seems to be driven by a decline in investment. Indeed, investment-capital ratios decline significantly at the start of democratizations, consistent with an increase in risk premia, shown in Table B.14. Dividend growth, conversely, turns slightly negative 3-years after a democratization start, but none of the point estimates are statistically significant.

Third, Table B.12 reports the longer run effects on average GDP growth and dividend growth in the 10 years after a democratization start, which shows the results are quite similar to those reported in the 5-year window.

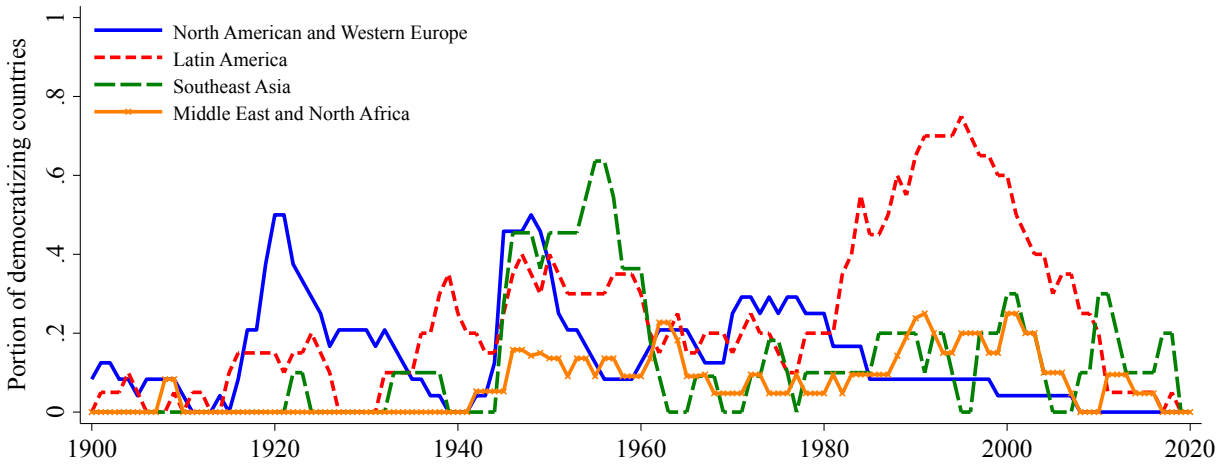
Finally, Figure B.4 shows the distribution of GDP growth and consumption growth both inside and outside of financial crises as a comparison to the democratizations results. Financial crises, unlike democratizations, come with an increase in left tail outcomes in both GDP and consumption growth.

Appendix B.9 reports robustness on the political risk results. Table B.13 reports the change in dividend yields during democratization years that coincide with ICB political crises, finding that the ICB crises that occur during democratizations display 25.7% larger change in dividend yields over 5-years with the result significant at the 5% level. This indicates that the large effect of democratizations on risk premia is present within the sample of ICB crises.

One potential concern is that uncertainty, in general, is elevated during democratizations which increases risk premia. While I argue below that uncertainty over future redistribution is driving the results, one could think that other types of uncertainty are at play. That said similar effects are not seen in other times of high uncertainty—such as political crises and autocratizations—and realized macroeconomic outcomes using 200 years of data do not indicate a change in the distribution of consumption. One additional test that provides evidence in favor of the redistribution channel is the differences in behavior between physical capital and human capital. In a world where the wealthy own physical capital, whereas human capital is the predominant asset of the middle and lower classes, democratizations would act as "bad" news for physical capitalists and "good" news for human capitalists. This would cause a divergence in investment between the two series.

Figure 3: Regional waves of democratization

This figure shows the proportion of countries undergoing a democratization in 4 regions according to the Episodes of Regime Transformation data.



Conversely, a rise in aggregate uncertainty should lead the two series to go in the same direction. Just such a divergence is seen in the data, and is shown in Appendix B.10. The divergence of investment between human and physical investment, therefore, provides solid evidence that there is substantial uncertainty for one group, but not another, consistent with the redistribution-based theories.

3.3 Regional variation in democratizations

One potential concern is that democratizations are at least partially endogenous. Since only the democratizations that emerge in equilibrium are observed, this introduces some degree of selection bias. Moreover, it is not clear in which direction selection bias could go. If the autocratic elite, for whom democratizations are harmful, are more influential in choosing the timing, then democratic transitions will happen when the cost is lowest for them. If these wealthy Elites own a disproportionate share of the assets, then the observed equilibrium effect would understate the true effect. Conversely, if the general citizenry are more influential in choosing the timing, they too would choose a timing to maximize benefits they receive, the cost of which would be born disproportionately by the autocratic elites. As such, if they get to choose the timing of the democratic transition the costs will be high. This could bias the estimates of the change in the risk premium in either direction.

Table 4: Regional waves of democratizations and dividend yields

This table presents regressions of the 5-year change in log dividend yields on indicator variables represented the start of a regional or non-regional democratization. Regional democratizations are defined as democratizations that occur in countries with an above the median proportion of countries in their region undergoing a democratization. The specification estimated is

$$dp_{c,t} - dp_{c,t-5} = \alpha + \beta \mathbb{1}_{c,t}\{\text{Democratization Start Year}\} + \epsilon_{c,t}$$

where dp is the log dividend yield and α represents either the coefficient on a vector of ones or the fixed effects denoted at the bottom of the table. Standard errors are clustered by country and year. All coefficients have been multiplied by 100 for presentation, and standard errors are in parentheses. In Columns (3) and (4) some observations are lost due to there only being one observation in a region-year or in a continent-regime-year. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable:	Five-year change in log dividend yields			
	(1)	(2)	(3)	(4)
Regional wave democratization start	20.60**	29.70***	29.56***	36.07**
	(10.09)	(9.13)	(10.40)	(14.13)
Non-regional wave democratization start	16.01*	12.74	18.56**	19.37**
	(9.23)	(8.09)	(9.22)	(8.99)
Country FE	No	Yes	Yes	Yes
Year FE	No	Yes	No	No
Region × Year FE	No	No	Yes	No
Continent × Regime × Year FE	No	No	No	Yes
Event Controls	Yes	Yes	Yes	Yes
Episode obs.	64	64	63	60
R^2	0.01	0.15	0.35	0.34
Observations	6,040	6,040	5,663	5,813

As pointed out by Huntington (1991), democratizations generally occur in regional waves. Notably, this means that democratizations that occur in a country's nearby neighbors, could make them more likely to democratize. As Acemoglu et al. (2019) and Delis et al. (2020) point out, democratizations that occur in regional ways, therefore, are more likely to be unrelated to long-run country-specific macroeconomic, political, and cultural conditions.

In this spirit, to better understand the direction of potential selection effect, I examine the number of ongoing democratizations divided by the total number of countries in a given region, and separate the democratization start indicators equally using this quantity.[8] The time series of portion of countries undergoing a democratization is shown in Figure 3 for selected regions. The

[8]The median democratization start occurs in a region where 20% of all countries are undergoing a democratization, compared to a median of 8.7% for countries not starting a democratization

various waves of democratization are immediately apparent, with the first two occurring around the two world wars and the last starting in the late 1970s. Also apparent is that the waves of democratization occurred asynchronously: the regions shown here democratized at different times. Identification comes from the idea that these regional waves are likely orthogonal to country-specific macroeconomic and political conditions and less likely to be chosen by any interest group within a country. This allows for an estimate of the treatment effect of democratization on asset prices purged of these confounds and selection effects.

Table 4 present these results. Democratizations that occur in regional waves are accompanied by larger point estimates than those that occur outside regional waves. In Columns (2) and (4), the point estimates observed in regional waves democratizations is nearly double those that occur outside of regional waves.[9] This provides some evidence that the selection bias of democratizations in the data is more likely to bias estimates of the treatment effect of democratizations on risk premia downwards, as countries will generally choose to democratize when they incur the lowest cost. Regional democratizations, however, come as more of a surprise and are therefore accompanied by a larger increases in risk premia.

4 DID Estimates: John XXIII and the Second Vatican Council

The previous section presented evidence that risk premia are elevated during democratizations. Moreover, it also suggested that neither an increase in macroeconomic risk nor general political risk can explain the results. However, there are still some outstanding questions. First, democratization episodes and the probability of their success are likely endogenous. In particular, democratizations are both more likely to happen if their costs to the incumbent autocrats are low and if the benefits to the would be democrats are high. As such, some evidence coming from an exogenous shift in the probability of a democratization would go a long way to supporting up the results outlined above.

Moreover, the results above rely on changes in dividend yields rather than looking at average excess returns to ascertain changes in risk premia, the latter being more common in the asset pricing literature and a more direct proxy for the risk premium. The reason for this is that the democratization events do not last long enough to get an accurate picture of risk premia after the initial shock using average excess returns. Long sample periods are needed to obtain risk premia from average excess returns (Merton, 1980), and the discount rate shocks at the start of democratizations would bias the results downward. An ideal experiment would increase the probability of a successful democratic transition outside of a democratization event, and leave this probability

[9] These coefficient estimates are, however, not statistically different according to an F-test.

elevated long enough to accurately measure an effect.

This section addresses these challenges by using a quasi-natural experiment of a doctrinal shift in favor of democracy by the Catholic church in the early 1960s as an exogenous shock to the probability that democracy consolidates for majority Catholic autocracies. It then examines returns before and after the doctrinal shift in majority Catholic autocracies relative to other countries in a difference-in-differences setting.

Historical context For much of its history the Catholic church was widely considered as a barrier to the consolidation of democracy. For example, Hook (1940) writes of the Catholic church, "Catholicism is the oldest and greatest totalitarian movement in history." Similarly, Blanshard (1949) writes "You cannot find in the entire literature of Catholicism a single unequivocal endorsement by any Pope of democracy as a superior form of government." This arrangement changed in October 1958 with the election of Cardinal Angelo Giuseppe Roncalli to the papacy. Donning the name John XXIII—history recalls him as *il Papa buono*—not much was expected of the old Pope, who was nearing 77 years old when he began his pontificate. He shocked the world, however, when he called for a major review of Catholic church doctrine on January 25th, 1959, less than 90 days into his papacy (Alberigo, 2005). This review became the Second Vatican Council (Vatican-II), which began in 1962 and lasted into 1965, outlasting John XXIII, who died in June 1963 of stomach cancer.[10]

Before he passed, John XXIII made the doctrinal shift official with his publication of *Pacem in Terris*, the first text in the history of the Catholic church to explicitly endorse democracy.[11] Sigmund (1987) marks *Pacem in Terris* as the beginning of the decisive shift in Catholic church policy in support of liberal democracy, and, according to Huntington (1991), the publication of *Pacem in Terris*, and Vatican-II which succeeded it, is one of the main reasons the third wave of democracy—which took place from the mid-1970s to the 1990s—occurred. Huntington also surmises this is the reason the Democracy's Third Wave began with majority Catholic autocracies. After 1963, the Catholic church played an active role in opposing authoritarian regimes in

[10] Vatican-II was a fitting follow-up to the First Vatican Council in which the Catholic church condemned liberal democracy.

[11] In particular, *Pacem in Terris* says "[...] the dignity of the human person involves the right to take an active part in public affairs and to contribute one's part to the common good of the citizens. [...] The human person is also entitled to the juridical protection of his rights." This support is followed up with support for democracy explicitly in Point 52: "The fact that authority comes from God does not mean that men have no power to choose those who are to rule the State, or to decide upon the type of government they want, and determine the procedure and limitations of rulers in the exercise of their authority. Hence the above teaching is consonant with any genuinely democratic form of government."

places like Argentina, Brazil, Chile, the Philippines, Poland, Spain, and many Central American countries, actively working as an advocate of democracy (Huntington, 1991, Fukuyama, 1992).

The announcement of Vatican-II and the doctrinal shift it brought about was likely not foreseen by investors and constitutes a plausibly exogenous shock to the probability a successful democratization occurs in majority Catholic autocracies. What evidence is there that majority Catholic and autocratic countries were primarily affected by this shock? First, most of the countries that underwent successful democratizations (according to the Lindberg et al. data) from 1964 to 1983 were majority Catholic: In 1963, 25% of autocracies were majority Catholic, yet these countries made up 55% of all successful democratizations over the next 20 years.[12]

Second, majority Catholic autocracies began to face more pressure from their citizens during the papacy of John XXIII. Civil society organizations (CSOs) became a much larger threat to autocratic regimes in majority Catholic countries, compared to non-Catholic autocracies, during the period of 1959–1963, as shown in the event study plot shown in Panel A of Figure 4. Moreover, we see a large increase in anti-regime CSO activity during the years of treatment from 1959–1963, whereas, prior to 1959 the trend was identical in the two groups of countries. Such increases in anti-regime CSO activity are important as this activity is a strong predictor of future democratizations, as shown in Figure C.6.

Third, democratic mobilizations, small and large scale protests in favor of democracy, became significantly more prevalent in majority Catholic autocracies compared to non-Catholic autocracies, as shown in Panel B of Figure 4. From 1935–1958, democratic demonstrations were similar across autocracies. After 1959 and *Pacem in Terris*, the tight grip of autocracy began to loosen in the majority Catholic countries and by 1985, large-scale democratic protests were far more commonplace.

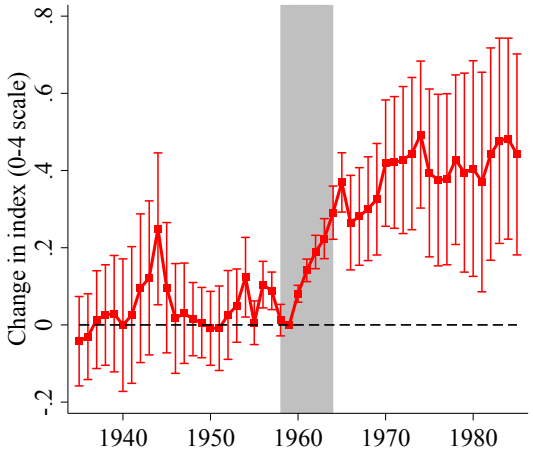
Identifying the treatment window First, it is important to specify the treatment window, which I take to be the period from 1959 to 1963, from the unexpected announcement of Vatican-II to the official announcement of the doctrinal shift with the publication of *Pacem in Terris*, as the years of treatment. The first reason for choosing a range of years, instead of a single event year, is that in this window there are many events which signaled the doctrinal shift. Since financial markets are forward looking, information about the doctrinal shift was likely incorporated into asset prices prior to the official announcement in 1963.

[12]This is based on successful democratization *starts* meaning that the democratizations that were initiated during this time were were more likely to be successful.

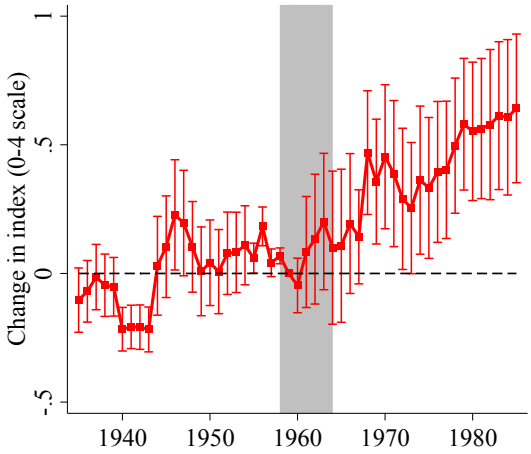
Figure 4: Anti-regime civil society organization activity and democratic mobilizations

This figure presents an event study comparing majority Catholic autocracies to non-Catholic autocracies in their anti-regime civil society organization (CSO) activity and frequency of democratic mobilizations and protests as determined by indices from the V-Dem database. The reference year is set to 1959, the first year of the doctrinal shift. Endpoints are binned and are not shown. The anti-regime CSO activity index ranks the threat posed by anti-regime civil society organizations on a scale of 0 to 4, where 0 is no anti-regime civil society organization activity, and 4 is a major present threat to the governing regime from anti-regime civil society organizations. The democratic mobilization index assesses the number of small- and large-scale demonstrations in favor of democracy in a given year with a maximum value of 4. The autocracy designation is also constructed from V-Dem data, and includes all closed or electoral autocracies from their "regimes of the world" variable. Data on the percentage of the population that is Catholic comes from the Correlates of War database. These data are extended backward using the first year of data. The vertical grey bars show the treatment window from 1959–1963.

Panel A: Anti-regime CSO activity



Panel B: Democratic mobilizations



The earliest candidate for a treatment year is 1959 when Pope John XXIII unexpectedly called Vatican-II to update Church doctrine on a variety of topics. It is hard to understate how surprising this decision was, even to high ranking Church officials. For example, Alberigo (2005) quotes interviews from Cardinals at the time who were purportedly unaware Vatican-II would be called. The surprise of the Cardinals also indicates that the decision to elect John XXIII to the papacy was unlikely driven by a desire for liberalization within the College of Cardinals.

Moreover, Alberigo (2005) makes quite clear that John XXIII was aware of the geopolitical environment in which he was operating, speculating that the rising tensions of the Cold War were front and center in the Vatican in 1959. Amid "great darkness," John XXIII sought to bring about "times of renewal" in the Church (Alberigo, 2005).[13]

[13] A *Macleans* article from June 20th, 1959 points that the turn toward democracy was suspected once Vatican-II was called. The article notes John XXIII's support for party competition in Itay, implying a more tolerant attitude

Vatican-II convened from late 1962 to 1965, but the direct announcements regarding democracy were focused in 1963 and toward the end of Vatican-II in 1965. However, the interim period after the announcement of Vatican-II but before it convened was filled with announcements that signaled change. For example, John XXIII's 1961 writing, *Mater et Magistra*, singles out economic and political inequalities on a number of occasions.[14] Further, a structural break test[15] on the democratic mobilizations and anti-regime civil society organizations series, presented in Figure 4, indicates a change in trend around 1959 or 1962 in the majority Catholic autocracies, indicating that the political reality on the ground began to change before 1963. In short, while 1963 is the earliest year where I can be sure investors were aware of the doctrinal shift, the process was underway long before then.

The second reason for choosing a range of years as the treatment window comes from the nature of shocks to expected returns—positive discount rate shocks correspond with *negative* contemporaneous returns. As such, if the treatment window starts too late, the estimated treatment effect on risk premia will be biased upward, as the contemporaneous negative returns associated with discount rate shocks will be located in the pre-period, inflating the estimated treatment effect. Similarly, if the treatment window starts too early, the treatment effect will be biased downward.

Identifying assumptions Political institutions and religion are not randomly assigned; they are the result of myriad historical, economic, social, and cultural processes that mold society over centuries. The identifying assumption underlying this exercise, therefore, does *not* rely on random assignment of religious demographics or political institutions. Instead, it relies on the assumption that absent the doctrinal shift, the treated (majority Catholic and autocratic countries) and control (all other countries) groups would have experienced similar returns, conditional on the relevant

toward left-wing parties and notes an almost immediate change in culture toward one of more free and fair expression (Neville, 1959).

[14] In particular "Among citizens of the same political community there is often a marked degree of economic and social inequality. [...] Where this situation obtains, justice and equity demand that public authority try to eliminate or reduce such imbalances. It should ensure that the less developed areas receive such essential public services as their circumstances require, in order to bring the standard of living in these areas into line with the national average. Furthermore, a suitable economic and social policy must be devised which will take into account the supply of labor, the drift of population, wages, taxes, credit, and the investing of money, especially in expanding industries. In short, it should be a policy designed to promote useful employment, enterprising initiative, and the exploitation of local resources."

[15] To obtain a single time series to test, the majority Catholic autocracy average is subtracted from the non-Catholic autocracy average for each variable to obtain a difference. Then, two structural break tests are run on each series on the period 1940–1989, a supremum Wald test and a supremum likelihood-ratio test. Each test indicates the same break date on each series: 1959 for democratic mobilizations and 1962 for anti-system CSO activity. The test statistics represent a high degree of statistical significance ($p < 0.001$).

Table 5: Balance of characteristics, 1946–1958

This table shows various characteristics of each of the different types countries used in the difference-in-differences framework. In the first 3 columns, the group means are reported. Columns (4) and (6) reports the point estimates on the regression

$$\text{Outcome}_{c,t} = \alpha + \beta \mathbb{1}_{c,t}\{\text{Majority Catholic Autocracy}\} + \epsilon_{c,t}$$

on either all countries or the subsample of autocracies. Columns (5) and (7) report the standard errors on those estimates, which are clustered by country. The coefficients on rate variables have been multiplied by 100. The risk adjustment procedure for returns uses a two-factor model as described below in Equation (4.2). ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

	Maj. Cath. Autocracy	**Non-Catholic Autocracy**	**Democracy**	**All Country Diff**	**S.E.**	**Autocracy Diff.**	**S.E.**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Excess Returns (%)	10.3	5.7	10.1	2.1	2.5	4.5	3.3
Risk-adjusted Returns (%)	-0.2	1.0	-1.7	0.3	2.1	-1.2	3.4
GDP Per Capita ($)	4,347	2,347	9,406	-2,131***	392	2,000**	767
Inflation (%)	18.5	7.1	5.3	12.5***	2.1	11.4*	6.1
Annual GDP per capita Growth (%)	3.4	1.3	3.4	11.4*	6.1	2.2**	0.9
Debt/GDP (%)	29.3	35.5	60.0	-22.5***	4.0	-6.2	11.8
Gini Coefficient	47.4	47.6	34.2	10.7***	2.2	-0.2	6.8
Resource Inequality Index	0.75	0.78	0.24	0.28***	0.03	-0.03	0.07
Dividend Growth (%)	10.7	6.4	8.4	2.8	5.2	4.3	7.5

controls and fixed effects. In essence, the parallel trends assumption must hold. Evidence in favor of parallel trends is provided below in the discussion of the results.

Additionally, to asses the dimensions along which the groups of countries differ, Table 5 shows the balance of characteristics in the pre-period (1946–1958). Majority Catholic autocracies tend to be poorer, have higher inflation, higher resource inequality, and lower debt-to-GDP ratios than the average country in the sample. However, they are much more closely matched to non-Catholic autocracies, where the only major differences lie in GDP per capita and GDP growth in the pre-period. To address this, I directly control for GDP per capita in all regressions and add country fixed effects, which capture differences in persistent variables like inequality, debt-GDP ratio, and resource inequality. Finally, I also estimate the difference-in-differences specification both using all other countries as the control group and only using non-Catholic autocracies as the control group.

Further, I treat the doctrinal shift in favor of democracy as exogenous, implicitly assuming away any reverse causality—in essence, identification by God. This essentially assumes that John

XXIII did not take asset prices or the asset portfolio of the Catholic church into account when making decisions on religious doctrine. In reality, however, things are more complex. While the sources in the Catholic theology literature do not point to economic reasons as the basis for the doctrinal shift in favor of democracy, the change may, in part, be due to the relatively high growth rates of protestant democracies compared to majority Catholic autocracies. The timing of the decision to start changing church doctrine, however, does seem random, as does the date which the information was made public, meaning that a partially economic basis for the doctrinal shift would not affect the validity of the identification strategy.

Finally, I also assume that investors have access to the same riskfree investment, in particular, the return on the U.S. treasury bill. The main reason for this is that the return on government bonds for the countries in my sample are not risk free, and may be exposed to time varying risks that equity assets are not exposed to (Miller et al., 2020). Constructing excess returns using government bonds may, therefore, erase part of the risk premium or induce measurement error in dependent variable, reducing the statistical power of the results.

Specification To assess the treatment effect of the doctrinal shift on majority Catholic autocracies, I employ a difference-in-differences framework of the form

$$\text{Excess Returns}_{c,t} = \alpha_c + \alpha_t + \beta \mathbb{1}_{c,t}\{\text{Post} \times \text{Catholic} \times \text{Autocracy}\} + \omega \text{Controls}_{c,t} + \epsilon_{c,t} \quad (4.1)$$

where c represents each country and t each year, and I exclude the years of treatment, 1959 to 1963, from the regression. This compares the pre- and post-period change in average excess returns for treated majority Catholic autocracies to what was experienced by the other countries in sample, where β provides the treatment effect of interest. This specification is estimated on two different samples: either all countries or using autocracies only. Both estimations are informative of the effects of the doctrinal shift. The all countries subsample is informative of the average treatment effect on majority Catholic autocracies when compared to all other countries. Given the relatively large sample size in this estimation, it gives the chance for greater precision in estimation.

However, it also comes with drawbacks. As we saw in Table 5, majority Catholic autocracies are not well-matched on observable characteristics with democratic countries. As such, variation in global conditions that load more heavily on these differences could introduce noise into the estimation. As such, I also estimate the specification using non-Catholic autocracies as the control group, who are much better matched on observable characteristics than democratic countries, as

shown in Table 5. This also allows me to assess whether majority Catholic autocracies were indeed the treated group, or if Vatican-II was just correlated with some other unobserved event that drove up average excess returns for all autocracies.

Controls and orthogonal risk-adjustment Each regression also includes a matrix of binary controls for macroeconomic and political events and continuous controls to better identify variation in risk premia due to democratization risk from realized returns. In particular, binary event controls for head of government deaths, financial crises, ICB political crises, wars, sovereign defaults, and recessions are included. Controls for the macroeconomic environment are also added, and include log-GDP growth and the level of log-GDP per capita. Each of these controls allow for a less attenuated estimate of the change in risk premia due to the doctrinal shift, as they absorb potential shocks unrelated to democratization risk that affect realized returns.

In addition to the above controls, I also adjust the average excess returns series for systematic risk that is not associated with risk coming from an increased probability of democratization. In particular, I implement a risk-adjustment which removes global and continental time-varying risk. This is done by estimating, on each country, the regression

$$R^{e}_{c,j,t} = \alpha_{c,t} + \beta_{1,t} R^{e,global}_{t} + \beta_{2,t,j} R^{e,continent}_{j,t} + \varepsilon_{c,j,t} \tag{4.2}$$

where $R^{e,global}_{t}$ denotes the total return in excess of the return on U.S. treasury bills on a GDP-weighted global market portfolio, $R^{e,continent}_{t}$ denotes the total return in excess of the return on U.S. treasury bills on a GDP-weighted region-specific market portfolio, and c denotes the country, j denotes the region,[16] and t denotes the year. The β's are estimated on a rolling basis over 10-years, and require a minimum of 5-years to be estimated.[17] The two-factor risk model has good explanatory power for returns in the cross-section of countries, with an average (median) coefficient of determination, or R^2, of 0.47 (0.47), and the unexpected returns for all groups of countries (i.e. non-Catholic autocracy, Catholic democracy, etc.) from 1946–1958 are insignificantly different than zero when standard errors are clustered at the country and year level.

Measuring risk premia Estimation is performed over two symmetric sample windows: the first from 1946–1976 and the second from 1939–1983. The first estimation window begins in 1946 to make it such that the pre-period does not contain the Second World War in the sample. This

[16]The regions used include: 1) South and Central America, 2) North America plus Europe, 3) Asia and Oceania (less the Middle East),4) Africa and the Middle East.

[17]The 5-year minimum requirement causes 12 observations to be lost.

means that the pre-period estimate for expected returns is based on a 13-year sample. However, as pointed out by Merton (1980), a long time horizon is needed to estimate expected returns on the stock market from a single time series. Estimating over a longer sample window and showing the results hold, mitigates this issue. This issue is also mitigated by two other methodological choices.

First, there are 43 countries in the sample, 9 of which are majority Catholic autocracies. This means that expected returns are averaged across a large group of countries, instead of just looking at individual time series. This is also the rationale for estimating the results on two potential control groups, all non-majority Catholic autocracies and all non-Catholic autocracies. While the later is likely a more viable control group, the former provides a more reliable estimate of risk premia. For this reason, both estimates are informative.

Second, the two-factor model described above removes two risk factors—global and continental risk—that would make the estimation of a country-specific increase in expected returns more difficult, as the effectively represent a form of measurement error in the dependent variable. Removing these risk factors allows for greater statistical power by removing orthogonal sources of variation. For these reasons, the methods I am employing are likely to pick up differences in risk premia due to democratization risk despite the somewhat short time series of the sample.

Results The results for the difference-in-differences estimation are shown in Table 6. Given the global and regional factor model performs quite well in the pre-period—in that no countries display significant abnormal returns—Panel A presents the results without fixed effects. Columns (1) and (2) show the results using all countries that are not majority Catholic autocracies as the control group. Results are shown over two symmetric samples around the treatment period: one from 1946–1976, which avoids WWII in the estimation, and one from 1939–1983 which allows for a longer estimation period, but includes WWII.[18] Both specifications exclude the treatment years, 1959 to 1963. These columns indicate a 4.9 to 5.7 percentage point rise in global and regional risk-adjusted average excess returns after the doctrinal shift in favor of democracy. These estimates are in line with the estimates implied by Section 3 and are statistically significant at the 5% level. Columns (3) and (4) provide the estimates using all autocracies as the control group and find very similar results—approximately a 8.5 to 8.8 percentage point treatment effect. This is reassuring as it indicates that majority Catholic autocracies are indeed differentially treated by the doctrinal shift compared to other autocracies in the same time period. Moreover, it also indicates the lack of balanced characteristics between majority Catholic autocracies and democracies do not seem to

[18] Avoiding WWII and using 1946–1983 for the second sample period yields very similar results.

play a large role in altering the points estimates.

Panel B presents the results for the more standard static difference-in-differences specification by adding two-way fixed effects.[19] Once again, Columns (1) and (2) show the results using all countries that are not majority Catholic autocracies as the control group and indicate slightly larger treatment effects, 6.2 to 10.5 percentage points, than in the previous panel. This is primarily due to the lower returns earned by majority Catholic autocracies in the post-war years relative to other countries. All estimates in these columns are statistically significant at the 1% level. Finally, Columns (3) and (4) provide the estimates using all autocracies as the control group, finding a 9.9 to 11.1 percentage point treatment effect.

To understand how these effects evolved over the sample, Figure 5 presents an event study plot on the autocratic subsample of a five-year moving average of global and continental risk-adjusted returns.[20] In the years prior to the doctrinal shift, the returns of majority Catholic autocracies closely correspond with the returns of other autocracies in the sample, with 0 falling within a 90% confidence interval in all estimates. From 1959 to 1963, however, majority Catholic autocracies earned much lower returns than their autocratic counterparts around the globe. These lower returns in this period are consistent with a discount rate shock occurring during the treatment period. This is reversed in the remainder of the sample, with majority Catholic autocracies earning higher global and regional risk-adjusted returns than other autocracies. Moreover, since the negative returns are focused in the treatment years, which are excluded, results do not seem to be biased by low realized returns in either the pre- or post-periods.

Robustness Appendix C provides various additional robustness checks. Appendix C.2 provides a first falsification test for the results, estimating a difference-in-differences specification using the First Vatican Council (Vatican-I) from 1864–1870 as treatment. Vatican-I provides an interesting test, as this doctrinal meeting centered around a rejection of liberalism and democratic principals, and likely strengthened the hold on power of for autocrats in majority Catholic countries. Given the equity data from GFD are available well into the 1800s, I can estimate a similar exercise to the difference-in-difference specification above to understand the effect of Vatican-I. Consistent

[19] As pointed out in Goldsmith-Pinkham, Hull and Kolesár (2022), the recent critiques around negative weights in linear regression do not apply in a static difference-in-differences setting, where by static I mean cases where treatment is not staggered. Since treatment occurs for all countries in 1959–1963, this is not a problem in my analysis and the β in Equation (4.1) can be thought of as a convex combination of potentially heterogeneous treatment effects on majority Catholic autocracies.

[20] As these are returns data, the unaveraged series presents substantial variation that make a pattern difficult to discern. A moving average, instead, makes these patterns clear.

Table 6: Difference-in-differences, 1959–1963 treatment window

This table shows the regression coefficients for the difference-in-differences specification in Equation (4.1) on two sample windows, one from 1946–1976 and the other from 1939–1983, and for two different samples, one for all countries and the other on autocracies only. In each regression, 1959 to 1963 are the years of treatment and are excluded. Excess returns are adjusted for global and continental risk using the two-factor risk model described by Equation (4.2). Standard errors are clustered by country and year. Included countries must have at least 20 observations from 1946–1983. All coefficients have been multiplied by 100, and standard errors are in parentheses. The controls used are a series of "event controls" meaning indicator variables for whether there is a war, financial crisis, recession, first 5-years of a sovereign default, a head of government death, and ICB political crisis, democratization, or coup d'etat. In addition to the event controls, I also control for log GDP per capita. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Panel A: No Fixed Effects

	All Countries		Autocracies Only	
	(1)	(2)	(3)	(4)
Majority Catholic Autocracy × Post	5.71**	4.94**	8.48**	8.80***
	(2.69)	(1.99)	(3.13)	(1.59)
Country FE	No	No	No	No
Year FE	No	No	No	No
Controls	Yes	Yes	Yes	Yes
Sample	1946–1976	1939–1983	1946–1976	1939–1983
R^2	0.04	0.02	0.04	0.04
Observations	1,069	1,592	512	736

Panel B: Two-Way Fixed Effects

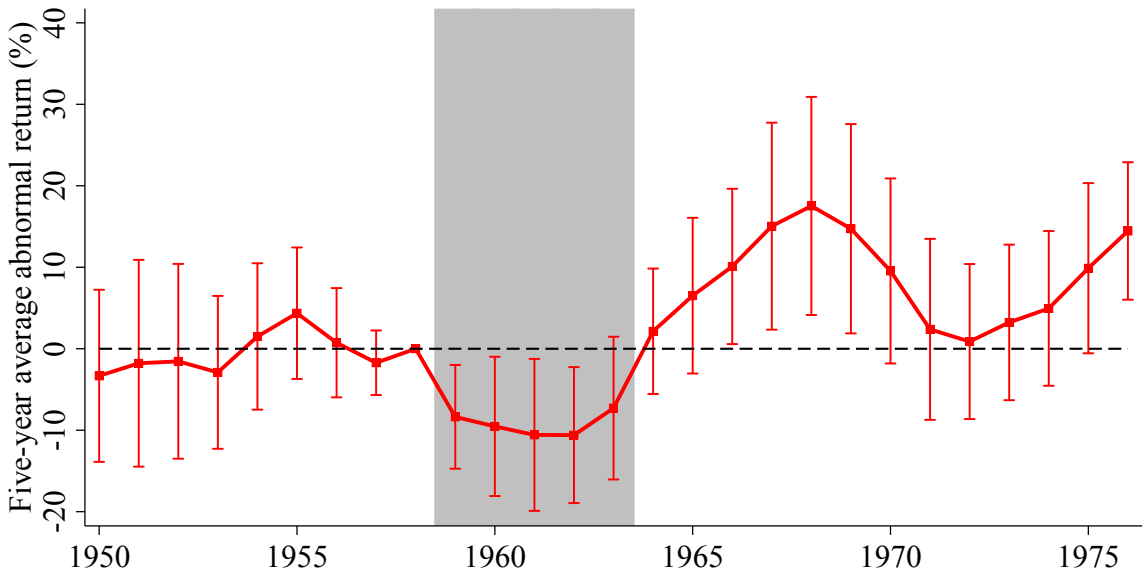
	All Countries		Autocracies Only	
	(1)	(2)	(3)	(4)
Majority Catholic Autocracy × Post	10.45***	6.20***	11.06***	9.89***
	(2.67)	(2.04)	(3.02)	(2.49)
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Sample	1946–1976	1939–1983	1946–1976	1939–1983
R^2	0.14	0.08	0.16	0.13
Observations	1,069	1,592	512	736

with the results above, I find 4.9 to 5.5 percentage point lower average excess returns for majority Catholic autocracies in the 15 and 20 years after 1870. The results, however, are statistically insignificant likely due to there being fewer observations in the estimating samples. Appendix C.3 provides a second falsification test by shifting the window of treatment forward and backward from 1959–1963. The results would have only been significant in a narrow window around the years of the doctrinal shift.

Appendix C.4 reports the results using different end dates for the estimation windows, which

Figure 5: Event study plot of global and continental risk-adjusted returns

This figure presents an event study plot of a five-year moving average of global and continental risk-adjusted returns estimated from the factor model given by Equation (4.2). The shaded bars represent the treatment period, 1959–1963. The red bars represent a 90% confidence interval with standard errors clustered by country and year.



also does not materially effect the results. The results are large and significant regardless of the particular end date chosen from 1970–1983, but the point estimates get smaller as the end date moves further in the future in the specification with all countries. In the autocracies subsample the point estimates are identical across end years, but only become statistically significant once enough observations are included to precisely pin down the treatment effect.

To assess whether any particular pair of countries are driving the results, Appendix C.5 reports the point estimates and t-statistics for the difference-in-differences specification excluding every pair of countries on both sample periods and in both sample groups. The results remain statistically significant across all specifications when any group of countries is excluded.

The results above point to a larger treatment effect than the estimates presented in Section 3. One potential explanation for this result is that the treatment effect of democratizations on risk premia is better identified using the doctrinal shift in the Catholic church, and it may very well be that the true effect from Section 3 is indeed larger. However, it is also possible that the estimates from the difference-in-differences exercise are less representative than the estimates from Section 3, as they cover a smaller time series and cross-section and may be driven by anomalously large obser-

vations. In this case, the true increase in risk premia may be smaller than the point estimates above suggest. To test to what extent this is the case, Appendix C.6 presents three different strategies for dealing with anomalously large observations: (1) winsorizing at the 5% and 10% levels, excluding the high return years from 1967–1969, and using outlier robust regression weights via Li (2006). In each specification the results are statistically significant, but speak to a smaller treatment effect of approximately 4–7 percentage points, in line with the results from Section 3.[21]

Finally, the factor model used to adjust average excess returns for time-varying global and continental risk could be absorbing some of the variation, especially for the majority Catholic autocracies in Latin America. To assure this is not driving the results, Appendix C.7 presents the results adjusting average excess returns for global risk only. The results without adjusting for continental risk, are similar to those without the risk adjustment except with larger point estimates and larger standard errors in some specifications.

5 Democracy and redistribution

The results outlined above indicate that democratizations are viewed as risky events by investors. However, we have yet to understand why this is the case. In this section, I propose a plausible mechanism: fear over future redistribution. Indeed, a popular and varied group of political science and political economy theories highlight the key role that inequality, class struggles, and redistribution play in democratizations. Moreover, this class of theories enjoy support in the data when comparing democracies and autocracies along several proxies for redistribution. Democracies, on average, have tax revenue-GDP ratios 7.8 percentage points higher, Gini coefficients that are 6.8 points lower, and labor shares of income that are 10.4 percentage points higher. These estimates are in line with the existing literature[22] who find that democracies tend to have a larger public sector, be more equal, have lower barriers to entry, and lower corruption and ability to divert rents from the government.

It is important to note, however, that the political economy literature is mixed on exactly whether and how democratizations cause redistribution. A comprehensive review of this literature comes from Acemoglu, Naidu, Restrepo and Robinson (2015), where the authors show that, while tax revenues-to-GDP rise between 10 to 25 percent after democratizations, while there is no statistically robust effect on inequality. Additional evidence of redistribution can by found

[21] The 4–7 percentage point treatment effect is also consistent with the 30-35% decline in prices seen in the treatment period.

[22] A synthesis of this literature can be found in Boix (2003) and Acemoglu, Naidu, Restrepo and Robinson (2015).

in Drautzburg, Fernández-Villaverde and Guerron-Quintana (2022) who note that the bargaining power of labor rises and the capital share of income declines after democratic transitions. They similarly find that autocratic coups reverse this, lowering the bargaining power of labor, raising the capital share of income. My paper pushes the literature forward to adding new evidence supporting the presence of redistribution after successful democratizations.

5.1 Evidence for redistribution after successful democratizations

This section seeks to establish a more robust link between democracy and redistribution by using a unique feature of the ERT data, namely that it distinguishes between successful and failed democratizations. The identification strategy relies on the idea that failed democratizations provide an appropriate counterfactual for successful democratizations after adding the relevant controls and fixed effects. More explicitly, the estimates can be interpreted as the treatment effect of democracy under the assumption that the success or failure of a democratization is as-if random.

To assess the effect of successful democratizations on the various outcomes of interest, I estimate the following specification:

$$y_{c,t} = \alpha_t + \alpha_c + \beta_1 \text{Post-Democratization}_{c,t} + \beta_2 \text{Post-Successful Democratization}_{c,t} + \omega' \text{Controls}_{c,t} + \varepsilon_{c,t} \quad (5.1)$$

where $y_{c,t}$ is the outcome of interest. The post-democratizations variables in Equation (5.1) represent an indicator variable equal to 1 if the year-country observation is within twenty years of the end of a democratization or successful democratization, respectively. The remainder of the section presents the estimated effect of a successful democratizations on both *explicit redistribution*—increase in the size of the public sector, reductions in inequality, and/or increases in the labor share—and *tacit redistribution*—changes in the distribution of public goods and increased entrepreneurship and competitiveness. Explicit redistribution will feature in the baseline version of the model presented in Section 6, where the estimates from Equation (5.1) will be used in the model calibration. The tacit redistribution will feature in some of the extensions to the baseline model. One important caveat is that the variables used below do not necessarily cover the same sample of democratizations used to generate the asset pricing results. This is because, when possible, I use all available data to estimate the effect sizes, and the data on redistribution cover a much shorter time series but broader cross-section than those for asset prices.

Explicit redistribution As Acemoglu and Robinson (2006) and Boix (2003) suggest, democracies should come along with an expanded role of the government. Therefore, a natural first place to turn is to examine what happens to the size of the public sector after a successful democratization. Along these lines, Table 7 reports the results of the average year-over-year change in government revenue-GDP ratios and tax revenue-GDP ratios after successful democratizations relative to failed democratizations. Government revenue-GDP ratios and tax revenue-GDP ratios rise substantially in the 20-years after a successful democratization, increasing by 0.24 and 0.20 percentage points year-over-year, respectively. Accumulating the effects points to a 4.8 percentage rise in government revenue-GDP ratios and a 4 percentage point rise in tax revenue-GDP ratios. These estimates are right in line with those reported by Acemoglu et al. (2015), who find that government revenue-GDP ratios rise by 1.9 to 4.8 percentage points and tax revenue-GDP ratios by 2.4 to 4.1 percentage points after countries transition to democracy.[23]

In addition to the the size of the public sector, democracy may also have an effect on inequality through its impact on the bargaining power of labor and its creation new opportunities for the previously disenfranchised. Indeed, Drautzburg, Fernández-Villaverde and Guerron-Quintana (2022) finds that the capital share of income declines significantly after democratic transitions and rises after autocratic reversals. To assess whether this is the case after successful democratizations in my sample, Table 7 reports the results of the average year-over-year change in the Gini coefficient and the labor share of income for employees. The Gini coefficient declines significantly, by 0.11 percentage points year-over-year in the after 20-years after the end of a successful democratization, pointing to a cumulative decline of 2.3 percentage points. Similarly, the labor share of income for employees also increases significantly, by 0.34 percentage points year-over-year in the after 20-years after the end of a successful democratization, pointing to a cumulative increase of 6.7 percentage points. This effect is mostly driven by the large decline in the labor share observed after failed democratizations. These estimates are also in-line with those in prior literature: Acemoglu et al. (2015) finds similar declines in inequality in long-run, albeit without statistical significance. One reason for this difference is that my sample includes a substantially longer time series and more than twice as many events, allowing for a more precise estimation of the effect. The effect on the labor share of income for employees is in line with Drautzburg, Fernández-Villaverde and Guerron-Quintana (2022) who find a 2.3 percentage point increase in the labor share in the 3-years after a democratic transition.

[23] These number are achieved by taking the minimum and maximum long-run effect estimates and multiplying them by the sample average for autocracies.

Table 7: Successful democratizations and explicit redistribution

This table presents regressions of the year-over-year change in the government revenue-GDP ratio, tax revenue-GDP ratio, Gini coefficient, labor share of income from employee compensation on indicators denoting if a year is in the 20 years after a democratization or successful democratization end. Country and year fixed effects are included in all regressions. Standard errors are clustered by country and reported in parentheses. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable:	Public Sector Size		Inequality and Labor Power	
	Δ Govt Rev/GDP	Δ Tax Rev/GDP	Δ Gini Coef	Δ Labor Share Emp
	(1)	(2)	(3)	(4)
Democratization	0.13	0.07	0.02	-0.17
	(0.15)	(0.10)	(0.02)	(0.27)
Post-Democratization (20-years)	-0.11	-0.15	0.02	-0.31*
	(0.09)	(0.10)	(0.02)	(0.16)
Successful Democratization	0.08	-0.04	-0.02	0.41
	(0.16)	(0.12)	(0.04)	(0.29)
Post-Successful Democratization (20-years)	0.24**	0.20**	-0.11***	0.34**
	(0.10)	(0.09)	(0.03)	(0.17)
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Episode obs.	106	238	141	101
R^2	0.10	0.03	0.29	0.08
Observations	5,521	8,296	4,987	3,899

Tacit redistribution Successful democratizations do not just come with higher taxes and transfers and lower inequality but also tacit redistribution—the loss of privileges for the elites currently benefiting from the autocratic system (Tullock, 1986). For example, these autocratic elites may lose their ability to influence the government via corruption and bribery. Moreover, autocratic forms of government allow for the more easy formation monopolistic and oligopolistic industrial organizations (Li and Resnick, 2003, Karolyi and Liao, 2017). As such, democratic transitions may bring increased competitive pressure to industrial incumbents from skillful entrepreneurs in addition to the loss of political connections (Fisman, 2001).

To test the empirical relevance of tacit redistribution, I examine the effect that successful democratizations have on the public sector corruption and bribery indices provided by V-Dem. These indices examine to what extend corruption and bribery are tolerated within the federal government. As Table 8 shows, there is a substantial reduction in both corruption and bribery during successful democratizations relative to failed ones. As I have transformed these to both be 0-100 scales and given that a democratization lasts an average of 8.5 years, this represents a 5.8 percentage point reduction in corruption and a 5.4 percentage point reduction in bribery. This provides evidence

Table 8: Successful democratizations and tacit redistribution

This table presents regressions of the year-over-year change in the V-Dem corruption index, V-Dem bribery index, the Fraser Institute's Pro-Competitive Regulation Score, and the net entry of public firms on indicators denoting if a year is in a democratization or successful democratization. Country and year fixed effects are included in all regressions. Standard errors are clustered by country and reported in parentheses. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable:	Rent Extraction		Competition and New Entry	
	Δ Corruption	Δ Bribery	Δ Pro-Comp Regulation	Δ log(Firms)
	(1)	(2)	(3)	(4)
Democratization	-0.07	-0.04	-0.65	-1.76
	(0.19)	(0.17)	(0.54)	(1.43)
Post-Democratization (10-years)	0.04	0.08	-0.15	-1.13
	(0.11)	(0.10)	(0.35)	(1.66)
Successful Democratization	-0.68***	-0.63***	1.17**	3.98*
	(0.24)	(0.20)	(0.54)	(2.11)
Post-Successful Democratization (10-years)	0.14	0.19	-0.06	0.76
	(0.14)	(0.13)	(0.37)	(1.87)
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Episode obs.	383	384	91	92
R^2	0.02	0.02	0.26	0.11
Observations	24,150	24,142	2,948	3,679

that the ability to seek rents seems to be reduced after successful democratic transitions.

Moreover, competitive pressure also increases during successful democratizations. Regulation favoring competition, as measured by the Economic Freedom Index from the Fraser Institute, rises by approximately 10 percentage points and the net entry of new public firms increases by approximately 32% given an average democratization link of 8.5 years. This indicates that incumbent firms may face additional pressure from new entrants in successful democratizations.

Cost of democratization over time Additional evidence in favor of the redistribution based theories can be found in Figure 6 which performs a regression of the 5-year change in log dividend yields on an indicator for the start year of a democratization (as in Table 1) on rolling 60-year estimation windows.[24] The coefficient estimates rise until the end of the estimation window moves into the 1950s and then plateau at approximately 20% until the present. Interestingly, the coefficients begin to rise after the first wave of democratizations beginning at the end of the First World War, with the estimated coefficient jumping dramatically in 1919. This is in line the with the nar-

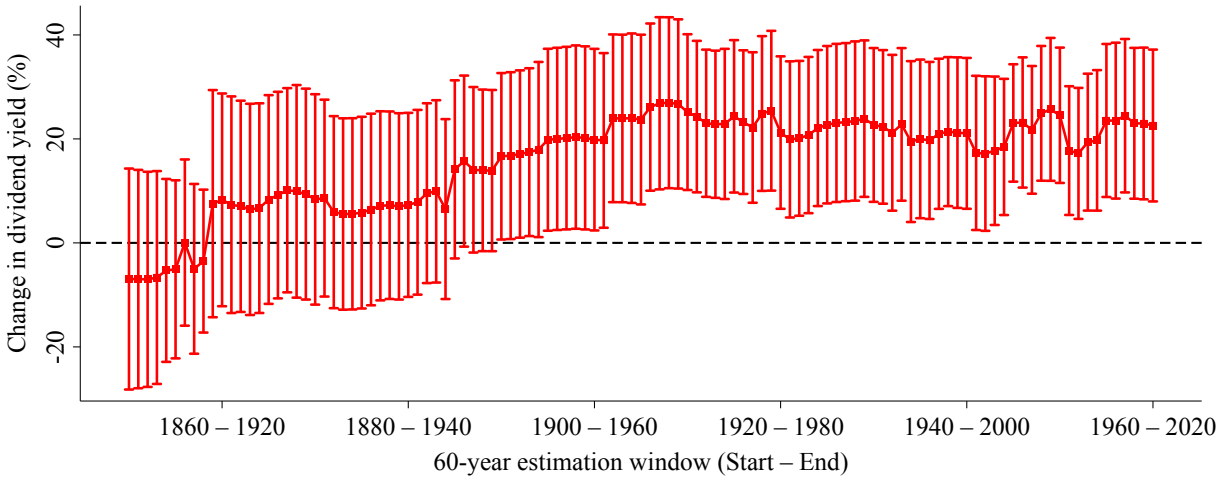
[24] A 60-year window is used to assure that enough democratizations are in the sample to allow for accurate estimation.

Figure 6: Rise in dividend yields around democratization starts, Rolling estimation

This figure presents coefficient estimates on 5-year change in log-dividend yields estimated on rolling 60-year windows. Horizontal axis represents the estimation window. The specification estimated is

$$dp_{c,t} - dp_{c,t-5} = \alpha_c + \alpha_t + \beta \mathbb{1}_{c,t}\{\text{Democratization Start Year}\} + \epsilon_{c,t}$$

where dp is the log dividend yield. Standard errors are clustered by country and year.



rative of Luebbert (1991) that prior to 1914, Elites could more effectively bargain with the middle class, shutting out the then nascent workers movements. This changed after the war as democratizations became more labor driven, and as a result focused on increasing labor bargaining power and reducing inequalities. This figure provides evidence that these increased costs in the Elites in the event of a successful democratizations brought with them higher risk premia in the transition period.

Moreover, the relative stability of these estimates challenges one of the main predictions of modernization theory, namely that global economic development has reduced the "cost" of democracy over time. This set of theories, starting with Lipset (1959) but based in the sociological tradition described in Weber (1946), highlight the idea that economic modernization may cause societies to become more democratic. The general thrust of these theories, come down to the idea that economic modernization makes democracy less expensive for those in power. This theory is then used to understand why democratizations have become more prevalent over time as the world has become wealthier, and why democratizations have occurred in higher income countries. Since the increase in risk premia observed in the data can be thought of as reflecting the cost of

democratizations born by investors. Under these modernization theories, this means that the cost of democracy should be falling over time. The results from Figure 6 show there is little evidence of a decline in the effect of democratization on risk premia over a 150-year sample window.

Robustness and additional results Appendix D presents robustness checks on these results. Appendix D.1 presents event study plots that show the timing of the government revenue-GDP ratio increases and the Gini coefficient declines, indicating that they begin right after the end of a successful democratization. Moreover, Appendix D.2 presents additional evidence that investors view successful democratizations negatively. In particular, Figure D.12 shows that prices decline upon the realization of a successful democratization, and rise if the democratization is reversed or co-opted. This supports the idea that a permanent, successful transition to democracy presents a risk to investors.

6 Model

The previous section presented evidence that successful democratizations come with substantial redistribution. However, it is not yet clear whether this amount of redistribution observed is quantitatively large enough to explain the asset pricing results from Sections 3 and 4. Because of the potentially nonlinear relationship between prices and future redistribution, this task requires a model.

This section presents a consumption-based asset pricing model with democratic transitions. Democratizations are modeled similarly to Acemoglu and Robinson (2006); a consortium of political elites in an autocracy attempt to maintain control of the state from a larger group of citizens. If democracy is implemented, the citizens redistribute income toward themselves by way of taxes and transfers. For the elites, the consolidation of democracy comes with a large reduction in their consumption and, therefore, acts similar to a "rare disaster." An increase in the probability that this happens raises risk premia (Gabaix, 2012, Wachter, 2013). As such, the model will generate a rise in risk premia during democratizations where the probability of a permanent transition is more likely. This increase in risk premia during democratizations is then shown to be proportional to the loss of Elite consumption if the democratization succeeds.

Macroeconomic environment A closed economy is populated by a mass $\delta < \frac{1}{2}$ of identical Elites and a mass $1 - \delta$ of identical Citizens that share coconuts (Y) from a Lucas tree. Time is

discrete and infinite. The log growth rate of coconuts from the Lucas tree is exogenous and follows

$$\log \frac{Y_t}{Y_{t-1}} = \bar{y} + \sigma_y \varepsilon_t. \tag{6.1}$$

where $\bar{y}$ is the average growth rate, σ_y is the standard deviation, and $\varepsilon \sim \mathcal{N}(0,1)$ is an independent and identically distributed, lognormal shock. The Elites receive a proportion $\theta^{\mathcal{I}} > \delta$ of the coconuts, meaning the per capita coconut income for each type of agent is

$$\bar{Y}_t^r = \left(\frac{\theta^{\mathcal{I}}}{\delta}\right) Y_t \tag{6.2}$$

$$\bar{Y}_t^p = \left(\frac{1-\theta^{\mathcal{I}}}{1-\delta}\right) Y_t, \tag{6.3}$$

where the superscript r denotes the (rich) Elites and the superscript p denotes the (poor) Citizens. The parameter θ dictates the level of pretax income inequality in the economy: The higher is θ, the more unequal is the economy. The superscript $\mathcal{I} \in \{A, D\}$ dictates the political regime that the economy operates in, either autocracy or democracy. This implies that inequality is permitted to depend on the political institutions in place, allowing for the possibility that democracy reduces inequality outright.[25]

In the economy there is one fiscal instrument: a linear tax on individual income that is paid back as an identical transfer to all agents. The tax rate is set by whoever has political power—the Elites in autocracy and the Citizens in democracy. The average coconuts available to members of each group, after taxes, is given by the expression

$$\hat{Y}_t^i(\tau_t) = (1-\tau_t)\bar{Y}_t^i + (\tau_t - \frac{1}{2}\tau_t^2) Y_t \tag{6.4}$$

where $i \in \{r, p\}$ and $\frac{1}{2}\tau_t^2$ is the cost of taxation, which introduces a reduced form Laffer curve. This is mainly for convenience; in the absence of a convex cost to taxes and transfers, the Citizens would choose a tax rate of 100%. An alternative model where the tax rate has some upper bound would provide a similar result. Moreover, this also makes optimization over taxes a static, rather than a dynamic, problem, simplifying the analysis.

[25] In a production model with Cobb-Douglass production, this would be mapped into a reduction in the capital share through an increase in, for example, the bargaining power of labor, as the results above and in Drautzburg et al. (2022) suggest. Labor bargaining shocks of this type have been studied in Danthine and Donaldson (2002) for asset prices and Drautzburg, Fernández-Villaverde and Guerron-Quintana (2021) for real fluctuations in the United States.

Both groups want to maximize their pre-tax income. This means that the optimal tax rate for the Elites is $\tau^{r*} = 0$ since the transfer is less than their pre-tax income, $\bar{Y}^r > Y$. The optimal tax rate for the Citizens, on the other hand, is positive and given by the revenue maximizing tax rate

$$\tau_{\mathcal{I}}^{p*} = \frac{\theta^{\mathcal{I}} - \delta}{1 - \delta}, \tag{6.5}$$

which is between 0 and 1 since $1 > \theta > \delta$. When the Citizens preferred tax rate is implemented their average post-tax income is

$$\hat{Y}_t^p(\tau^{p*}) = \underbrace{\bar{Y}_t^p}_{\text{Endowed income}} + \underbrace{\frac{1}{2}\left(\frac{\theta^{\mathcal{I}} - \delta}{1 - \delta}\right)^2 Y_t}_{\text{Maximum transfers}}. \tag{6.6}$$

Both agents have have Epstein and Zin (1989) preferences over coconuts. The Elites are assumed to be the only agent that can access to financial markets meaning they are the marginal investors in this economy.

Autocracy and revolution In autocracy, in which the model starts, only the Elites have the right to vote, meaning whatever policy they choose will be enacted. Absent any counteracting force, the Citizens would never receiving voting rights and the Elites would set taxes to zero in each period. However, the numerically superior Citizens can indirectly control the the choices of the Elites through the threat of revolution. If the Citizens revolt, they are assumed to be successful, all the Elites are killed, and they take control of the economy for the remainder of history. But, this victory comes at a cost; a fraction μ of the Lucas tree is permanently destroyed. The expected present value of their utility after the revolution (scaled by the average income at time t) is, therefore,

$$v^p(R, \mu_t) = \left(\frac{1 - \beta}{1 - \beta^\star}\right)^{\frac{1}{1-1/\psi}} \left(\frac{1 - \mu_t}{1 - \delta}\right) \tag{6.7}$$

where $\beta^\star \equiv \beta e^{(1-1/\psi)\bar{y} + \frac{1}{2}(1-\gamma)(1-1/\psi)\sigma_y^2}$, β the rate of time discounting common across agents, γ the coefficient of relative risk aversion, and ψ the elasticity of intertemporal substitution (EIS). This expression for the value function is derived in Appendix E.1.

Variation in μ ultimately drives the dynamics in the model.[26] When μ is high, the Citizens

[26] Variation in the cost of revolution μ is a reduced form way of modeling a complex collective action problem that the Citizens must solve to successfully mount a revolution. A revolution cannot be successful if just one Citizen wakes up one morning and decides to revolt; she must be accompanied by others to pose a true threat. Variation in μ,

cannot credibly threaten revolution, as the destruction wrought makes them better off under autocracy. When μ is low, conversely, the Citizens can credibly threaten revolution, which constrains the Elites from setting their optimal tax policy, tilting the equilibrium policy toward the optimal policy of the Citizens.

Conceding democracy If the threat of revolution is great enough, then even temporarily granting the optimal policy of the Citizens is not enough to prevent a revolution. In such cases, the Elites would like to promise transfers in future periods, but such transfers are not credible; if μ returns to a high value, then the Elites would no longer find it optimal to follow through on the promised transfers in any Markovian equilibrium.[27] In this case, it becomes optimal for the Elites to extend voting rights to the Citizens, ushering in democracy. Democracy makes the promise to redistribute in future periods credible, as the more numerous Citizens become the median voter. This effectively grants them power over all future tax policy decisions, since once the economy becomes a democracy, it remains a democracy forever. As such, the present value of the Citizens' utility (once again, scaled by the average income at time t) is expressed by

$$v^p(D) = \left(\frac{1-\beta}{1-\beta^\star}\right)^{\frac{1}{1-1/\psi}} \left(\frac{1-\theta^D}{1-\delta} + \frac{1}{2}\left(\frac{\theta^D-\delta}{1-\delta}\right)^2\right) \tag{6.8}$$

which is the expected present value of receiving the maximum transfer income from Equation (6.6) in each period under Epstein and Zin utility.

Political environment as a game The political environment can be modeled formally as a game. The order of the decisions is as follows (with mathematical notation in parentheses):

1. Nature reveals the cost of revolution (μ_t) to both the Elites and the Citizens.
2. The Elites choose to either concede democracy ($\phi_t = 1$) or keep autocracy ($\phi_t = 0$).
3. Both the Elites and Citizens choose the tax rate (τ_t^i) they want to implement. If the society is an autocratic, then the tax rate chosen by the Elites is implemented; if the society is democratic then the tax rate chosen by the Citizens is implemented.
4. The Citizens, after observing the tax rate, choose to revolt ($\rho_t = 1$) or not revolt ($\rho_t = 0$).

therefore, represents that solving this problem is "hit-or-miss." Explicitly modeling the collective action problem that the Citizens face is beyond the scope of this paper.

[27] Other path dependent equilibria do exist and could make future promises of redistribution credible, though I do not examine them in this paper. Acemoglu and Robinson (2006) provide an extension of this setup to include path dependency and find that it does not change the overall conclusions of the model.

The choice set of the Elites in time t is given by $\varsigma_t^r = \{\tau_t^r(\mu_t), \phi_t(\mu_t)\}$ where their chosen tax rate and the choice of whether to concede democracy are functions of the cost of a revolution. Further, if $\phi_t = 1$ then $\phi_{t+s} = 1$ for $s > 0$, meaning that once democracy is conceded, it is conceded forever.

The choice set of the Citizens in time t is given by $\varsigma_t^p = \{\tau_t(\phi_t), \rho_t(\mu_t, \phi_t)\}$ where their chosen tax rate and the choice to revolt are functions of the political institutions in place and the cost of a revolution. Further, if $\rho_t = 1$ then $\rho_{t+s} = 1$ for $s > 0$, meaning if the revolution occurs, its effects are permanent.

The Citizens' problem There are, in essence, three relevant political institutions for the Citizens: autocracy, democracy, and revolution. The value functions for the Citizens in the revolution and democracy are given by Equations (6.7) and (6.8) above, and the payoff in autocracy is given by

$$v^p(A, \mu_t)^{1-1/\psi} = (1-\beta)\hat{y}_t^p(\tau_t)^{1-1/\psi} + \beta^\star \left(\mathbb{E}_t\left[v^p(\mu_{t+1})^{1-\gamma}\right]\right)^{\frac{1-1/\psi}{1-\gamma}} \tag{6.9}$$

where

$$v^p(\mu_{t+1})^{1-\gamma} = \begin{cases} v^p(D)^{1-\gamma} & \text{if } \phi_{t+1} = 1 \\ v^p(A, \mu_{t+1})^{1-\gamma} & \text{if } \phi_{t+1} = 0 \\ v^p(R, \mu_{t+1})^{1-\gamma} & \text{if } \rho_{t+1} = 1 \end{cases}$$

is the continuation value of the Citizens utility in the various possible future states.

The revolution constraint Since the Elites die if a revolution occurs they are always willing to transfer coconuts to the Citizens to avoid a revolution. This imposes a *revolution constraint* on the tax rate the Elites can choose in autocracy in that the Citizens must be at least indifferent between revolting and the autocratic status quo, meaning

$$v^p(A, \mu_t) \geq v^p(R, \mu_t). \tag{6.10}$$

The revolution constraint introduces two critical values of μ: the first is $\underline{\mu}$ which is where Equation (6.10) holds with equality when there are no taxes,

$$v^p(A, \underline{\mu}; \tau_t = 0) = v^p(R, \underline{\mu}), \tag{6.11}$$

and the second is μ^* where Equation (6.10) holds with equality when the preferred tax rate of the Citizens is in place,

$$v^p(A, \mu^*; \tau^{p*}) = v^p(R, \mu^*). \tag{6.12}$$

When $\mu \in [\underline{\mu}, 1]$ then the revolution constraint does not bind; no transfers are needed to avert a revolution, as the Citizens are, at least, weakly better off under autocracy. As the cost of revolution falls such that $\mu \in [\mu^*, \underline{\mu})$, the Elites must raise taxes and transfers to prevent the Citizens from revolting. I define the tax rate that makes the Citizens indifferent between a revolution and autocracy as $\hat{\tau}(\mu_t)$, which satisfies

$$v^p(A, \mu_t; \hat{\tau}(\mu_t)) = v^p(R, \mu_t). \tag{6.13}$$

What happens if μ falls below μ^*? It is no longer sufficient for the Elites to raise taxes for just one period, and they are unable to credibly promise future redistribution in the states of the world where μ is high. In this case, the Elites must concede democracy to prevent a revolution. Conceding democracy prevents a revolution provided that $\mu \in [\mu^{**}, \mu^*)$ where μ^{**} equates Equation (6.7) and Equation (6.8) and is given by

$$\mu^{**} = \theta^D - \frac{1}{2}\frac{(\theta^D - \delta)^2}{1 - \delta}. \tag{6.14}$$

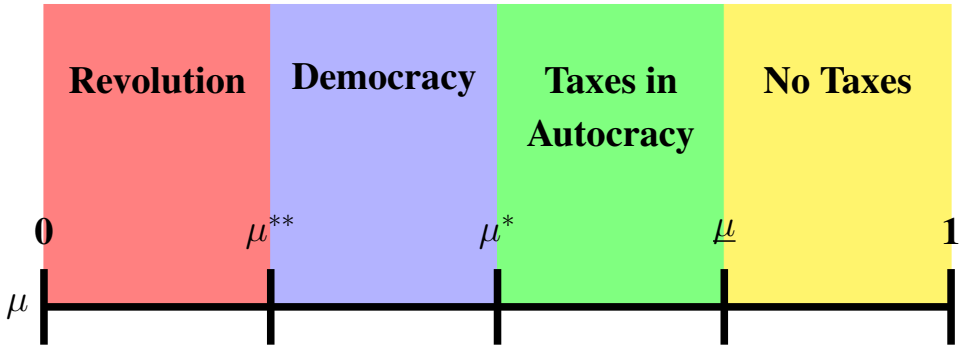
This expression takes into account both the higher taxes and transfers and lower inequality in democracy.

Finally, if $\mu \in [0, \mu^{**})$, the Elites can do nothing to prevent a revolution, as the Citizens are better off in the revolutionary state than in democracy. In the special case of this economy I solve, however, I only examine cases where $\mu \in [\mu^{**}, 1]$. The action regions and their associated thresholds are shown in Figure 7.

Stochastic process for μ The cost of revolution μ evolves according to a three-state, Markov process with the transition matrix

$$\mathbf{P} = \begin{pmatrix} p_{11} & p_{12} & p_{13} \\ p_{21} & p_{22} & p_{23} \\ p_{31} & p_{32} & p_{33} \end{pmatrix} = \begin{pmatrix} 0.99 & 0.01 & 0.00 \\ 0.20 & 0.60 & 0.20 \\ 0.00 & 0.50 & 0.50 \end{pmatrix}, \tag{6.15}$$

Figure 7: Equilibrium Outcome for Regions of μ



where $\mu^1 = \mu^2 = \mu^A$ and $\mu^3 = \mu^{**}$, and the calibrated probabilities[28] of transition are shown after the second equality. In the first state, the *autocracy state*, the Elites do not face a revolutionary threat in this period.

In the second state, the *democratization state*, the Elites now face a potential major revolutionary threat in the next period, with μ having a 20% chance of being equal to μ^{**} in $t+1$. If this comes to pass, then all the Elites can do to prevent a revolution is to concede democracy. However, also note that there is also an equal probability that the democratization will fail, returning the economy to autocracy. This is the key intuition for why democratization affects the risk premium: it is uncertain whether it will succeed or fail.

Such uncertainty over the success or failure of a democratization is present in the data. Just over 52% of democratizations fail, meaning that the society reverts to autocracy only a short time after the initial jump in measures of democratic institutions. In sum, the primary mechanism for the rise in risk premia in the model enjoys support in the data.

In the third state, the revolutionary threat is realized and the Elites need to concede democracy. Note, that while there is a 50% chance of returning back to the democratization state in the transition matrix, this probability is immaterial; when democracy is conceded, it is an absorbing state. This means that once democracy is conceded the state variable μ becomes irrelevant. Here is the model is parameterized to produce a democratic transition in the final state, but more general calibrations which lead to either an autocratic equilibrium or revolution are possible. These generalizations are discussed in Appendix E.2.

[28]These probabilities are calibrated to match (1) the probability of starting a democratization in any given year of 1%, (2) a 50% success rate of democratizations, and (3) a median democratization length of 5 years.

Equilibrium I consider Markov perfect equilibria, meaning that all strategies must be a best response and can only depend on the current state, not the history of past states. A Markov perfect equilibrium consists of a choice set for the Elites and the Citizens for each combination of state variables (namely, the current value of μ and political institutions from the previous period). But, all of the consequential choices take place in autocracy. If the revolution occurs, taxes are always zero, as the Elites have been killed, and the Citizens have equal income, and, therefore, no desire for taxes and transfers. In democracy, the Citizens preferred tax rate is always chosen. Based on the assumed process for μ, the only equilibrium to the political game is for the economy to be an autocracy in autocracy and democratization states and transition to democracy the democracy state. In the case, taxes will be equal to $\hat{\tau}(\mu)$ in the first two states and equal to τ^{p*} in the last state. A revolution never occurs in equilibrium under this calibration.

6.1 Asset pricing implications

The Elites are the only financial markets participants, so they price all assets. Since the Elites are negatively affected by a democratic transition, an increase in the probability that this happens will correspond with a higher risk premium. This increase in the risk premium will be a combination of the probability of transition along with the reduction in Elite consumption associated with the democratization. Using this relationship, the model will allow for the decomposition of the relative importance of the different forms of redistribution outlined in Section 5.

The Elites' problem The Elites have Epstein and Zin utility and trade in the consumption claim and a zero-net supply riskfree bond. The recursive formulation of their utility in autocracy can be written similar to the Citizens' utility and is given by

$$v^p(A,\mu_t)^{1-1/\psi} = (1-\beta)(\hat{y}_t^r(\tau_t))^{1-1/\psi} + \beta^\star \left(\mathbb{E}_t\left[v^r(\mu_{t+1})^{1-\gamma}\right]\right)^{\frac{1-1/\psi}{1-\gamma}} \tag{6.16}$$

where

$$v^r(\mu_{t+1})^{1-\gamma} = \begin{cases} v^r(D)^{1-\gamma} & \text{if } \phi_{t+1}=1 \\ v^r(A,\mu_{t+1})^{1-\gamma} & \text{if } \phi_{t+1}=0 \\ -v^r(R) & \text{if } \rho_{t+1}=1 \end{cases}$$

with $-v^r(R)$ representing the utility of the Elites in the revolution. The budget constraint is the standard relation

$$W_{t+1} = (W_t - C_t^r)R_{W,t+1} \tag{6.17}$$

and market clearing requires that Elite income equals Elite consumption in the aggregate and that the aggregate Elite portfolio place a weight of 1 on the consumption claim (following from the riskfree asset being in zero-net supply). This is because there is no trading between the Elites and the Citizens in autocracy. The pricing kernel revolves around the growth rate of the consumption of the Elites. This can be decomposed as

$$\frac{C^r_{t+1}}{C^r_t} \equiv \left(\frac{Y_{t+1}}{Y_t}\right)\left(\frac{c^r_{t+1}}{c^r_t}\right) \tag{6.18}$$

where c^r is Elite consumption scaled by aggregate income. The growth rate of scaled consumption is given by

$$\frac{c^r_{t+1}}{c^r_t} \equiv \begin{cases} Z & \text{if } \phi_t = 1; \phi_{t-1} = 0 \\ 1 & \text{otherwise} \end{cases} \tag{6.19}$$

where $Z < 1$ represents the penalty the Elites face to their consumption upon a successful transition to democracy, given by

$$Z = \frac{\hat{y}^r_t(\tau^{p*}(\theta^D))}{\hat{y}^r_t(\tau_t)}. \tag{6.20}$$

Consistent with Wachter (2013), I model the equity claim as a levered claim to consumption, with $D_t = C^\lambda_t$. This allows the equity claim to have sufficient risk to have a chance at matching the targeted change in dividend yields observed in democratizations. The details of the derivation are in Appendix E.3.

Since the the increase in redistribution is in part driven by an increase in taxes, one may question whether modeling the dividend claim as a levered claim to consumption is appropriate. What this implies literally is that the dividend claim will see larger increases in taxes than does consumption. While this may or may not be the case, it is more accurate to think about leverage as a reduced form way of modeling the impact of democratization on incumbent firms. As Section 5.1 shows, pro-competitive regulation and net entry increases in successful democratizations. This disproportionately effects the owners of incumbent firms. These firms are also the ones for whom we see an increase in dividend yields at the start of the democratization. Since entry an exit is not present in the model, the redistribution of dividends from incumbent firms to new entrants is also missing. The leverage parameter can be thought of as a reduced form way of modeling this more complex phenomenon. This link will be made explicit in some of the extensions below.

The movement in μ mimics variation in the disaster probability as in Gabaix (2012) and

Wachter (2013): As a permanent transition to democracy becomes more likely, risk premia and dividend yields rise. Qualitatively, this will allow the model to match the increase in dividend yields in democratizations. However, it is not obvious that the quantities of redistribution, especially explicit redistribution, are great enough to match the large increase in dividend yields observed in the data. I turn to this exercise in the following subsections.

6.2 Extensions

The baseline version of the model allows for two types of redistribution: higher taxes and lower inequality. However, the rise in taxes and decline in inequality is treated as homogeneous across all democratizations. Moreover, as shown in Section 5 there are other types of tacit redistribution that may occur in democracy such as the loss of political rents and increased economic competition. This section presents extensions to the baseline model that allow for these features.

Uncertain redistribution The baseline version of the model treats the redistribution in democracy as though it is known with certainty. In practice, however, the amount of redistribution that could occur is uncertain; it depends on the new political equilibrium that emerges in democracy. In this extension, I allow for the Elites to be uncertain about the redistribution that democracy brings. In particular, the Elites will recapture some fraction χ of their old political power. This mean that the resulting tax policy is given by $\tau = (1-\chi)\tau^{p*} + \chi\tau^{r*}$.

In the version calibrated below, I take $\chi \in \{\chi^L, \chi^H\}$ to have two values which realize with probability $1-q$ and q, respectively. This allows for cases where democracy redistributes little versus cases where it redistributes much. Unsurprisingly this leads to larger increases in dividend yields: As the left tail becomes longer, so grows the risk investors face.

Loss of political rents In the baseline model, there are no taxes in autocracy unless the Elites are forced to concede them. Therefore, the only way to match the average government revenue-GDP ratio in autocracy is to calibrate μ in autocracy to match it. This blunts the redistributive effects of democracy, since taxes are already elevated in autocracy. However, it could be the case that the Elites are able to extract a disproportionate share of rents from the government. If so, the Elites may want to raise tax revenue they can then divert toward their own consumption. Quantitatively, this further reduces Elite consumption after a successful democratic transition.

This is model by introducing two new features. First, I allow for government revenue to be spent on "particularistic public goods" of which the Elites can consume a fraction ν. Second, whoever has political power can choose which fraction of government spending goes to these

particularistic public goods, denoted by $\aleph$. This implies that Elite post-tax income is now

$$\hat{Y}_t^r(\tau_t) = (1-\tau_t)\bar{Y}_t^r + \left(\left(1+\aleph(\frac{\nu}{\delta}-1)\right)\tau_t - \frac{1}{2}\omega\tau_t^2\right)Y_t. \tag{6.21}$$

In autocracy, when the Elites face no revolutionary threat, they optimally choose the corner case $\aleph = 1$ and an optimal tax rate $\tau^{r*} = \frac{\nu-\theta^A}{\omega\delta}$ provided $\nu > \theta^A$. Conversely, in the democratic equilibrium, the Citizens do not benefit from these particularistic public goods, and set $\aleph = 0$.

In this version of the model, the Elites face a steeper reduction in consumption when transitioning to democracy than in the baseline version, leading to a larger asset pricing effect. This can be disciplined by calibrating the model to the V-Dem resource inequality index, which ranks countries on a 0 to 100 scale of how unequally public goods are shared. This index is 68.4 in autocracies as compared to 27.9 in democracies. Alternatively, one could calibrate to the educational spending Gini coefficient in autocracies, 57.5 (as compared to 24.6 in democracies). The calibration below requires 60.7 to match the tax rate observed in autocracy in the data.

Increased competition for incumbent firms Section 5 provides evidence that economic competition increases during successful democratizations. Pro-competitive regulation rises as does net entry of publicly traded firms. This is also in line with the literature around structural transformation and democratization, detailed in Aghion, Akcigit and Howitt (2014) and Martinez-Bravo and Wantchekon (2021). In this literature, the improvement in democratic institutions leads to an increase in creative destruction, which presents a risk to incumbent firms.[29] Since the increase in dividend yields at the start of democratizations is measured on the set of incumbent firms, this could present an important source of risk, similar to the displacement risk described in Gârleanu, Kogan and Panageas (2012).

Therefore, in this extension instead of modeling the dividend claim as a levered claim to Elite consumption, I model it as the set of incumbent firms in autocracy. By definition, these firms receive all dividends as they have the entire market share within the autocratic economy. When democracy comes, barriers to entry fall and these firms lose a fraction ξ of their market share and profits to the new entrants, where this is modeled as a one time permanent shock. The growth rate

[29] One mechanism that could bring this about is a loss of political connections for incumbent firms, similar to the model presented in Grotteria (2019).

of dividends is, therefore, given by,

$$\frac{D_{t+1}}{D_t} \equiv \left(\frac{Y_{t+1}}{Y_t}\right)^{\Upsilon} \left(\frac{d_{t+1}}{d_t}\right) \tag{6.22}$$

where d_{t+1} is dividends scaled by aggregate income which has a growth rate given by

$$\frac{d_{t+1}}{d_t} \equiv \begin{cases} \left(\frac{1-\tau^D_{Div}}{1-\tau^A_{Div}}\right)\xi & \text{if } \phi_t = 1; \phi_{t-1} = 0 \\ 1 & \text{otherwise} \end{cases} \tag{6.23}$$

where $\tau^{\mathcal{I}}_{Div}$ is the dividend tax rate in either autocracy or democracy.

The advantage of modeling the dividend claim in this way, as opposed to purely a levered claim to Elite consumption, is that in the data I do not observe large decline in aggregate dividends after successful democratizations, but rather declines in prices as described in Appendix D.2. In this extension, the model comes with a redistribution of dividends to new entrants in the next period, meaning the aggregate level of dividends need not decline. However, prices would decline for incumbents upon the realization of the shock.

Finally, it is also possible that the increase in competition presents a shock to Elite consumption in addition to a shock to the cashflow of the dividend claim for incumbent firms. For example, if Elites are overexposed to certain industries and this risk is not diversifiable, this would add to the quantitative impact of an increase in competition. I do not add this to the model here, so the calibrated ξ below should be thought of as aggregating both the direct effect on incumbent cashflows and the shock to Elite consumption it potentially brings about. Allowing for this would lower the ξ parameter needed to match the rise in dividend yields.

6.3 Calibration

The model is calibrated using a combination of data moments from various sources, the reduced form estimates from above, and the asset pricing literature as outlined in Table 9.

The average growth rate and standard deviation in autocracy are set to their data counterparts in the Maddison Historical Statistics data. To calibrate the inequality parameters, I assume that the elites constitute 10% of the population. This assumption is without loss of generality, as what really matters for inequality is the difference between θ and δ. The inequality parameter θ is calibrated to match the average Gini coefficient in autocracy equal to approximately 47. Since this is a two agent model where agents have two different incomes, the Gini coefficient is equal to the income

Table 9: Model calibration

This table shows the calibration of the parameters in the model. A description of the moment matched and the source of the data or parameter value are provided alongside the calibrated value.

Parameter	Value	Description	Source
Lucas Tree:			
$\bar{y}$	0.014	Income growth in autocracy	Maddison Historical Statistics
σ_y	0.073	Income standard deviation	Maddison Historical Statistics
Inequality parameters:			
θ^A	0.570	Inequality in autocracy	WIID
θ^D	0.525	Inequality in democracy	Author estimation
δ	0.10	Fraction of elites	Assumption
τ_A^{p*}	0.190	Tax rate in autocracy	Autocracy Gov. Rev.-GDP ratio
ω	1.96	Cost of taxation	Democracy Gov. Rev.-GDP ratio
Dividend claim:			
λ	2.6	Leverage of dividend claim	Wachter (2013)
Preference parameters:			
β	0.9572	Subjective discount rate	Match PD ratio in autocracy
γ	5	Relative risk aversion	Bansal, Kiku, Yaron (2010)
ψ	1.5	IES	Bansal, Kiku, Yaron (2010)

share less the number of agents in that group, or $\theta - \delta$. Conversely, the reduction in θ could also be thought of as a reduction in capital share, as would be the case in an economy with Cobb-Douglass production. Therefore, θ in democracy is calibrated to match the average of the reduced form evidence of a 2.3 percentage point decline in the Gini coefficient and a 6.7 percentage point rise in the labor share, equal to a decline of 4.5 percentage points.

The tax rate in autocracy is equivalent to the government revenue-GDP ratio, equal to 19%. I calibrate μ such that the government revenue-GDP ratio matches its average in autocracy. The cost of raising tax revenue ω is calibrated to match the observed 4.8 percentage point increase in government revenue-GDP ratios found in Section 5.

The values for relative risk aversion and the EIS are standard and taken from Bansal, Kiku and Yaron (2010) and the amount of leverage present in the dividend claim is taken from Wachter (2013). Finally, the subjective rate of discount β is calibrated to match the dividend yield in autocracy (0.05).

6.4 Model Results

Table 10 presents the rise in dividend yields when transitioning from autocracy to democratization in the model. The model generates a 13.2% increase in dividend yields, approximately 65%

Table 10: Model results

This table shows the results for the change in the log dividend yield in the model and data for the baseline version and various extensions.

Panel A: Elites cost of democracy		
Inequality reduction $\theta^A - \theta^D$		0.045
Tax increase $\tau(D) - \tau(A)$		0.048
Reduction in Elite consumption (%)		13.1
Panel B: Baseline Model	Model	Data
Dividend yield autocracy	0.050	0.050
Dividend yield autocracy	0.057	0.060
Change in dividend yield (%)	13.2	19.8
Panel C: Extensions change in dividend yield (%)	Model	Data
Uncertain redistribution	16.7	19.8
Loss of political rents ($\nu = 0.6072$)	33.2	19.8
Increased competition for incumbent firms ($\xi = 0.632$)	19.8	19.8

of the rise in dividend yields observed in the data when country and year fixed effects are added. Risk over future redistribution can explain a substantial portion of the rise in dividend yields seen in democratizations.

Also, presented are the results for the several model extensions. The extension that allows for a mean-preserving increase in uncertainty over future redistribution generates a rise in dividend yields of 16.7%, explaining 84.% of the asset pricing results. The extension that allows for the Elites to divert public goods for their own means generates a very large increase in dividend yields, approximately 33.2%, due to the steeper decline in consumption this version of the model generates. Each of these model results are well within the standard error bars in the data.

Finally, the increased competition specification is calibrated to match the rise in dividend yields, hence the numbers match exactly. In particular it does this by assuming an increase in taxes equal to the difference in corporate taxes between autocracies and large democracies reported in Genschel, Lierse and Seelkopf (2016) which is approximately 10%. The ξ parameter needed to match the data is then 0.632 which implies that new entrants take approximately 37% of incumbent market share right after transition. Translated into year-over-year changes, this would represent a 2 to 2.5 percent change in incumbent market share relative to the autocratic equilibrium in the 20

years after transition. This would require a decline in incumbent firm valuations, consistent with evidence from Fisman (2001), who finds a 24% reduction in connected firm value after the fall of the Suharto regime in Indonesia, and consistent with the results I present in Appendix D.2.

6.5 There and back again: Autocratic reversals

Section 3 presents the potentially puzzling result that dividend yields are, on average, flat in autocratizations. One may question, given this theoretical framework, why the estimated coefficients are not negative. This subsection endeavors to answer this question.

Imagine now that democracy is reversible. The Elites can choose to attempt to overthrow the government and reinstate autocracy. The proposition of overthrowing the government is, however, risky: if the Elites fail, they are ostracized and lose permanently a fraction Z of their consumption. We can see already how this differs from the model of democratization. In the baseline model above, democratization is a risk *imposed* on the Elites by a potentially revolutionary citizenry; autocratization, conversely, is a risk *taken* by the Elites to gain greater future consumption.

If the Elites initiate an autocratization, they are successful with probability q, fail with probability q, and the autocratization continues with probability $1-2q$. If successful, Elites overthrow the government and implement autocracy once more. If it is unsuccessful, the society remains democratic and the Elites cannot attempt another democratization. The cost Z is known to them at the time of initiating the autocratization. Moreover, for simplicity I assume, as I did in the democratization model, that if the Elites are successful, the society will permanently transition to autocracy and they will receive the value function $V^r(A)$ which is equivalent to the present value of their income in permanent autocracy.

Randomly, the Elites get a take-it-or-leave-it offer to overthrow the government at potential cost Z. They then choose to either initiate an autocratization or stay in democracy. If they stay in democracy, society remains democratic forever. In this setup, therefore, an attempted autocratization is a positive net present value, high-risk bet. If successful, the Elites receive a large payoff through lower redistribution. If failed, they face a large, permanent shock to their consumption.

The value function of the Elites from undertaking an autocratization is given by

$$v^r(T,Z_t)^{1-\frac{1}{\psi}} = (1-\beta)(\hat{y}_t(D))^{1-\frac{1}{\psi}} + \beta^\star \mathbb{E}_t\left[qv^r(D,F)^{1-\gamma} + (1-2q)v^r(T,Z_t)^{1-\gamma} + qv^r(A)^{1-\gamma}\right]^{\frac{1-\frac{1}{\psi}}{1-\gamma}}, \quad (6.24)$$

where the value function from declining the autocratization is given by Equation (6.8), the value function from a failed autocratization is given by

$$v^r(D,F) = \left(\frac{1-\beta}{1-\beta^\star}\right)^{\frac{1}{1-1/\psi}} \hat{y}_t(D)(1-Z)$$

where $\hat{y}_t(D)$ is the Elite's post-tax income in democracy. The indifference point for the Elites, Z^*, is the point at which Equation (6.8) is equal to Equation (6.24). For autocratizations that occur at this indifference point, there is no effect on the consumption wealth ratio, as the potential growth effects offset the increase in risk.

However, for the levered claim to consumption, the risk effects dominate, leading to a small increase in dividend yields. Indeed, when calibrating to the parameters in Table 9, the dividend yield displays a 2.3 percent rise in an autocratization, almost identical to the results in Columns (3) and (4) of Table 3.

The model also provides another counter-intuitive result: the larger the benefits to instituting autocracy, the larger the increase in dividend yields for autocratizations attempted near the threshold. This is because of the endogenous respond of the Elites to take greater risk in autocratizations. In particular, the threshold value Z^* rises as autocracy becomes more attractive.

7 Conclusion

Any financial history of the last 200 years that excludes democratizations is incomplete. Risk premia are significantly elevated during periods of democratization, a fact present across multiple proxies in 90 countries over 200 years. At the same time, democratizations are not accompanied by an increased risk to aggregate consumption nor GDP and other periods of high political risk do not see the same effect. Finally, exogenous variation in the probability of a successful democratization stemming from a change in Catholic church doctrine causes a marked increases in average excess returns for treated countries using a difference-in-differences framework. A plausible mechanism, redistribution risk, is proposed to explain the results. This mechanism enjoys support in the data, as the size of the public sector rises and income inequality falls after successful democratizations relative to failed ones. Combining a model of democratic transitions in the style of Acemoglu and Robinson (2006) with a standard asset pricing model with limited asset market participation, this redistribution can explain 65% of the asset pricing results. The same model, can also explain the lack of an asset pricing effect observed in autocratizations.

While the results in the paper highlight several potential channels of redistribution that can

generate the asset pricing results, reconciling the evidence on redistribution with the other macroeconomic effects of democracy—for example, higher growth (Acemoglu et al., 2019)—would be a natural path for future research. A better understanding of the interplay of these phenomena could help the field to better understand not just periods of democratization, but how policy and political risk affect individual, firm, and government decision making more broadly. Further, understanding how the increased globalization of asset markets influence the results would be a fruitful road to explore as well.

Finally, this paper provides new avenues of study in consumption-based asset pricing by focusing on political institutions and how they interact with the distribution (and redistribution) of resources. In particular, I show that neither an increase in the probability of a large drop in aggregate consumption nor an increase in the volatility of aggregate consumption is necessary for an increase in risk premia, but rather that the consumption risk faced by relatively wealthy equity market participants need only be affected. This paves additional roads through which heterogeneity and the risk of redistribution can lead to variation in risk premia.

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INTERNET APPENDIX

A Data appendix

This section provides information on how each data series used in the paper is constructed. Additional information on the specific data used for each country can be found in the Supplemental Online Appendix.

Equity returns and dividend yields I construct the longest possible equity return series by combining data from five main sources: the Global Financial Data (GFD) Main Dataset, the Jorda-Schularik-Taylor Macrohistory Database (JST), the GFD London Stock Exchange (GFD-LSE) Dataset, IBES Global, and Factset International Annual Fiscal data. From both the main GFD dataset and the GFD-LSE dataset, I obtain the dividend yield, total return index, and price index for each country. Cum-dividend returns are therefore given by

$$R_{c,t}^{tot} = \frac{\text{Total Return Index}_{c,t}}{\text{Total Return Index}_{c,t-1}}$$

and ex-dividend returns (capital gains) by

$$R_{c,t}^{cap.\ gains} = \frac{\text{Price Index}_{c,t}}{\text{Price Index}_{c,t-1}}.$$

The GFD return series are in downloaded in U.S. dollars and then adjusted for expected U.S. inflation, which is calculated by fitting an AR(1) process to realized inflation, to put them in real terms. The JST returns data must be converted to U.S. dollars, which is done using the `xusd` variable they provide. Using the dividend yield and capital gains, I also construct a dividend growth series, which is given by

$$\frac{D_{c,t}}{D_{c,t-1}} = \frac{\text{Dividend Yield}_{c,t}}{\text{Dividend Yield}_{c,t-1}}(R_{c,t}^{cap.\ gains})^{-1}.$$

To obtain the series from IBES Global, I use the Actuals file which contains price and dividend yield information for several country-specific stock indices from 1985 to the present. For these data, the index with the longest possible time series in each country is used. All series with a

dividend yield equal to 0 or above 0.50 are dropped. For data from Factset Annual Fiscal file, I obtain a market capitalization weighted average of dividends per share and the price per share by country-year and divide them to obtain the dividend yield.

Using these data, I construct the longest possible cum-dividend returns series possible. To do this, I create an all cum-dividend returns variable and populate it with returns from GFD's Main Dataset and then fill in missing observations with the JST data. The JST data only covers 17 countries compared to the 64 countries the main GFD dataset covers. This adds 438 additional observations. I then fill in the remaining missing observations with capital gains data from the main GFD data added to the dividend yield from either the main GFD data or the GFD-LSE data, which adds 1,093 observations. Next, the remaining missing data are filled in using returns from IBES and Factset which are obtained by adding the capital gains to the dividend yield. This yields an additional 430 observations. Finally, I fill in any remaining missing observations with cum-dividend returns from the GFD-LSE data, which adds 2,880 observations. The total cum-dividend returns data have 8,845 observations. The GFD-LSE data covers a different universe of companies than the other two datasets, usually large, global firms. One may be concerned with using this series, as it is not explicitly traded by home market participants. However, it has a fairly strong correlation (0.44) with the main GFD data.

I use the same procedure to combine the ex-dividend returns data and dividend growth data and to combine the *changes* in the dividend yield, rather than the levels. Indeed, the levels vary somewhat across data sources, so combining them would lead to arbitrary jumps in the series. Using the changes, on the other hand, does not have this issue. The change in the log dividend yield series covers 90 countries over 201 years.

Fixed income and inflation Results for corporate bond yields are reported in Appendix B. Corporate bond yields data only come from one data source, the GFD main dataset. This series covers 21 countries over 164 years. U.S. government bond and bill yields come from the GFD main dataset.

Inflation data come from the GFD main dataset, the JST data, and the Varieties of Democracy (V-Dem) database. The aggregate series is created by taking an equal weighted average over all these series.

Episodes of Regime Transformation data The main source used to locate democratization episodes of the Episodes of Regime Transformation (ERT) data. These data use changes in electoral democracy index (EDI) from the Varieties of Democracy (V-Dem) project to determine the

start and end years of democratizations. V-Dem creates the EDI by surveying over 3,500 country-level experts and asking "to what extent is the ideal of electoral democracy in its fullest sense achieved." This is done in practice by combining information on the level of freedom of association, to what extend elections are free and fair, the level of freedom of expression, to what extent government officials are elected, and by examining the proportion of individuals in the country with voting rights. V-Dem then combines these 5 index categories both additively and using a five-way multiplicative interaction to produce a continuous index from 0 to 1.

The ERT data locate democratization episodes using the EDI according to two main criteria. First, a democratization episode must begin with at least a 0.01 increase in the EDI. Second, the episode must have at least a 0.10 increase in the EDI before experiencing (1) an annual drop in the EDI of 0.03, (2) a cumulative drop in the EDI of 0.10, or a stasis period of 5-years or longer. A stasis period is defined as a period where no years see at least a 0.01 increase in the EDI. The end year of a democratization is determined as the final year prior to when the annual or cumulative decline threshold or the stasis period condition is met. V-Dem produces these data from 1900– 2018. To extend the data to cover my full sample, I use an identical procedure on the subset of countries V-Dem provides the EDI prior to 1900. This yields 10 additional democratization episodes. In addition to providing democratization dates, the ERT data also provide information on autocratization episodes too. This is done by using an identical procedure to create the democratization indicators, but using 1 minus the EDI.

Successful and failed democratizations are determined using the aggregate democratization outcome (dem_ep_outcome_agg) variable. This measure yields four potential outcomes: (1) democratic transition, (2) no democratic transition, (3) deepened democracy, or (4) outcome censored. A democratization is coded as a democratic transition if "the episode resulted in a change from autocracy to democracy on the [regimes of the world] measure followed by a democratic founding election." A democratization is coded with no democratic transition if "the episode did not result in a change from autocracy to democracy on the [regimes of the world] measure; or it did result in a change between democracy and autocracy on the [regimes of the world] measure, but the political unit did not hold a democratic founding election before reverting to autocracy." A democratization is coded as a democratic deepening if "the episode resulted in further liberalization or democratization of a political unit that was already classified as democracy in the pre-episode year." A democratization is coded as censored if the episode is ongoing in the final year of the data. Both democratic transition and democratic deepening episodes are coded as successful democratizations

whereas no democratic transition episodes are coded as failed.

A list of the democratization episodes used for the asset pricing results is presented in Table G.19. Alongside this table is a discussion of 2 case studies of the democratization process, subsequent redistribution, and stock market impact of the democratization events. These case studies focus on the democratic transition in Sweden from 1917–1924 (Appendix F.1) and the failed democratization in France from 1847–1852 (Appendix F.2).

B Stylized facts appendix

This section presents additional evidence that risk premia are elevated during periods of democratization and robustness results on the stylized facts included in the paper.

B.1 Democratizations during defaults and wars

As discussed in Section 3 the change in the dividend yield will be a strongly downward biased proxy for the change in the risk premium if there are transitory shocks to the level of dividends that quickly rebound. Table B.1 shows that this condition holds for the subset of democratizations that occur when a war is happening within that country or during a sovereign default episode. The three-year change in log dividends imply a nearly 50% drop in dividends at the start of these "adverse" democratizations. However, this drop is reversed over the remainder of the democratization, which sees 5.3% higher average dividend growth annually during the remainder of the democratization.[30] As such, the change in dividend yields during these episodes cannot be interpreted as the change in the risk premium, but is rather a statement of the speed with which investors expect cashflows to rebound.

B.2 Other indicators for democratizations

This section presents results for regressions of the 5-year change in the log dividend yield on various indicators for democratization episodes. Table B.2 presents the results without fixed effects, Table B.3 with country and year fixed effects, and Table B.4 with country and region-by-year fixed effects. Column (1) presents the results for the ERT data without the extension to the 19th century that I reconstruct. Without the 19th century data, the results are even stronger, statistically significant at the 1% level across all specifications, and point to a 20.5–27.2% rise in the risk premium. Columns (2) presents the results for democratizations constructed using

[30]It is also worth noting that wars inside of a country and sovereign default episodes, both inside and outside democratizations, display a similar pattern, albeit with a lower magnitude on decline and subsequent rebound than those seen in democratizations that co-occur with these events.

Table B.1: Dividend growth in adverse democratizations

This table presents regressions for the cumulative 3 year change in log dividends and log prices around adverse democratizations, defined as democratizations that begin in a country fighting in a war on their own continent or are engaged in a sovereign default. Results are shown in a three-year window around the adverse democratization start and then reported for the remainder of the democratization after the start in the final column. Standard errors are clustered by country and year and are reported in parentheses. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable:	Three-year change in log dividends		Three-year change in log prices	
	(1)	(2)	(3)	(4)
F.Adverse Democratization Start	-50.59**	-42.84**	-28.60**	-29.02***
	(22.66)	(19.51)	(14.33)	(10.67)
Adverse Democratization Start	-52.53***	-38.71**	-14.00	-7.75
	(18.08)	(16.01)	(17.05)	(12.25)
L.Adverse Democratization Start	-33.31*	-22.95	-5.10	5.80
	(18.70)	(19.79)	(19.35)	(15.49)
Adverse Democratization After Start	15.90**	16.52**	9.43	5.64
	(6.25)	(7.51)	(7.65)	(6.84)
Country FE	No	Yes	No	Yes
Year FE	No	Yes	No	Yes
R^2	0.01	0.21	0.00	0.40
Observations	5,668	5,666	5,668	5,666

episodes where the growth rate of the electoral institutions index is in excess of the 95th percentile. Using the growth, as opposed to the raw difference overweights democratizations occurring in less democratic countries. This measure permits an additional 100 event years, and the results are quantitatively similar, significant at either the 1% or 5% level, and point to a 16.7–20.9% increase in the risk premium. Column (3) presents democratic jumps, determined as periods where the electoral democracy index rises in excess of 0.01, the threshold value for the beginning of an ERT democratization. In total, there are 845 democratic jumps in the sample for which there are dividend yield data. The results point to a 5.6-6.5% change in the risk premium over 5-years per democratic jump and are statistically significant at either the 1% or 5% level. The smaller magnitudes here make sense, as these are generally episodes without a large increase in possibility of a full democratic transition. Column (4) presents the results for the democratization start year in the Lindberg et al. (2018) data, which display the largest point estimate of any of the measures shown, are significant at either the 1% or 5% level, and indicate a 27.7–38.9% rise in the risk premium.

Table B.2: Other measures of democratization, no fixed effects

This table presents regressions of the 5-year change in log dividend yields on indicator variables representing the start of a democratization for 5 different potential measures of democratization. The specification estimated is

$$dp_{c,t} - dp_{c,t-5} = \alpha + \beta \mathbb{1}_{c,t}\{\text{Democratization Start Year}\} + \epsilon_{c,t}$$

where dp is the log dividend yield and α represents the coefficient on a vector of ones. Standard errors are clustered by country and year. All coefficients have been multiplied by 100 for presentation, and standard errors are in parentheses. The Lindberg et al. data have fewer observations because they begin in 1900. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable:	Five-year change in log dividend yields				
	(1)	(2)	(3)	(4)	(5)
F.Democratization start	7.29	3.53	2.80	11.91	-2.72
	(9.45)	(7.03)	(2.42)	(7.82)	(12.64)
Democratization start	20.52***	10.68*	6.12***	28.59**	19.86**
	(6.07)	(5.97)	(2.14)	(10.97)	(9.66)
L.Democratization start	17.41**	16.76**	2.06	-10.86	20.20
	(8.04)	(6.40)	(2.49)	(14.92)	(12.68)
Democratization type	ERT Only	Growth Rate	Dem. Jump	Lindberg	Acemoglu et al
Country FE	No	No	No	No	No
Year FE	No	No	No	No	No
Region × Year FE	No	No	No	No	No
Continent × Regime × Year FE	No	No	No	No	No
Event Controls	Yes	Yes	Yes	Yes	Yes
Episode obs.	74	162	917	43	32
R^2	0.02	0.02	0.02	0.02	0.02
Observations	5,972	5,972	5,972	4,509	5,972

Finally, Column (5) presents the results for democratizations from Acemoglu et al. (2019) from 1960–2010. For episodes prior to 1960, I fill in these data using a similar methodology. Most of the variation in the Acemoglu et al. measure comes from transition years as given by the Polity and Freedom House regime type datasets.[31] Since both Polity and V-Dem provide data back to the 1800's, I extend the Acemoglu dataset using consensus transition years in both dataset. This procedure provides 32 total transition years for which asset pricing data are available. As Column (5) of Table B.2 shows, the change in dividend yields around these transition years is large and statistically significant at the 1% or 5% levels, pointing to a 19.9–24.6% rise in the risk premium.

[31] Prior to 1972, when the Freedom House data end, these authors rely on other regime type measures and independent historical research.

Table B.3: Other measures of democratization, country and year fixed effects

This table presents regressions of the 5-year change in log dividend yields on indicator variables representing the start of a democratization for 5 different potential measures of democratization. The specification estimated is

$$dp_{c,t} - dp_{c,t-5} = \alpha + \beta \mathbb{1}_{c,t}\{\text{Democratization Start Year}\} + \epsilon_{c,t}$$

where dp is the log dividend yield and α represents country and year fixed effects. Standard errors are clustered by country and year. All coefficients have been multiplied by 100 for presentation, and standard errors are in parentheses. The Lindberg et al. data have fewer observations because they begin in 1900. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable:	Five-year change in log dividend yields				
	(1)	(2)	(3)	(4)	(5)
F.Democratization start	12.83	7.86	3.79	14.89**	3.48
	(9.69)	(7.13)	(2.42)	(7.13)	(11.69)
Democratization start	22.29***	8.75	5.60**	27.73***	22.54**
	(5.98)	(7.10)	(2.26)	(9.76)	(9.19)
L.Democratization start	14.07*	16.66***	0.84	-5.81	21.92*
	(7.94)	(6.22)	(2.68)	(13.72)	(12.56)
Democratization type	ERT Only	Growth Rate	Dem. Jump	Lindberg	Acemoglu et al
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Region × Year FE	No	No	No	No	No
Continent × Regime × Year FE	No	No	No	No	No
Event Controls	Yes	Yes	Yes	Yes	Yes
Episode obs.	74	162	917	43	32
R^2	0.15	0.15	0.15	0.16	0.15
Observations	5,968	5,968	5,968	4,508	5,968

B.3 Alternative measures for change in risk premia

This section presents other measures for changes in risk premia as proxied by changes in dividend yields. One potential concern comes from using the 5 year difference in log dividend yields as the main measure. While this methodological choice is mainly made to stay in line with the prior literature, Table B.5 shows that all differences in dividend yields from 1 to 4 years provide very similar results. In particular, the 3 and 4 year change in log dividend yields provides nearly identical quantitative results to the 5 year change, while the 1 and 2 year change provide results that are smaller in magnitude. This potentially indicates, however, that financial markets begin to react to democratization risk earlier than the political scientists labeling these episodes.

The level of dividend yields are also elevated at the start of democratizations even relative to their country-specific long-run mean and the average dividend yield in a given year, region-year,

Table B.4: Other measures of democratization, country and region-year fixed effects

This table presents regressions of the 5-year change in log dividend yields on indicator variables representing the start of a democratization for 5 different potential measures of democratization. The specification estimated is

$$dp_{c,t} - dp_{c,t-5} = \alpha + \beta \mathbb{1}_{c,t}\{\text{Democratization Start Year}\} + \epsilon_{c,t}$$

where dp is the log dividend yield and α represents country and region-year fixed effects. Standard errors are clustered by country and year. All coefficients have been multiplied by 100 for presentation, and standard errors are in parentheses. The Lindberg et al. data have fewer observations because they begin in 1900. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable:	Five-year change in log dividend yields				
	(1)	(2)	(3)	(4)	(5)
F.Democratization start	10.15	12.99	6.16**	36.57***	5.52
	(10.06)	(8.14)	(2.73)	(11.29)	(11.23)
Democratization start	27.24***	11.33	6.50***	38.91***	24.62***
	(6.66)	(8.39)	(2.47)	(14.65)	(8.22)
L.Democratization start	25.09***	20.93***	0.02	3.32	18.54
	(9.42)	(7.07)	(2.64)	(12.25)	(11.65)
Democratization type	ERT Only	Growth Rate	Dem. Jump	Lindberg	Acemoglu et al
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	No	No	No	No	No
Region × Year FE	Yes	Yes	Yes	Yes	Yes
Continent × Regime × Year FE	No	No	No	No	No
Event Controls	Yes	Yes	Yes	Yes	Yes
Episode obs.	73	149	895	40	32
R^2	0.36	0.36	0.36	0.37	0.36
Observations	5,591	5,591	5,591	4,306	5,591

or continent-regime-year as shown in Table B.6.

Additionally, as shown in some of the case studies below in Appendices F.1 and F.2, the dividend yield in democratizations is not always highest at the start of the episode. To account for this, Table B.7 provides two additional measures for the change in log dividend yields. The first takes, for any given t, the maximum dividend yield from $t-3$ to $t+5$ and subtracts it from the minimum dividend yield from $t-8$ to $t-4$. In this way, this change in the dividend yield is a peak-to-trough measure that assures the higher dividend yield occurs around the event of interest. The reason $t-3$ is chosen is because this is when dividend yields begin to rise in the event study plot shown in Figure 1, but results are similar using other windows. Also reported are the same regressions on the maximum 5-year change in log dividend yields observed in from $t-2$ to $t+2$ for any given t. Each of these measures point to a large and statistically significant rise in dividend

Table B.5: Shorter changes in log dividend yields

This table presents regressions of the 1, 2,3, and 4 year change in log dividend yields on indicator variables representing the start of a democratization. The specification estimated is

$$dp_{c,t} - dp_{c,t-h} = \alpha + \beta \mathbb{1}_{c,t}\{\text{Democratization Start Year}\} + \epsilon_{c,t}$$

where dp is the log dividend yield, $h \in \{1, 2, 3, 4\}$ represents the period over which the difference is taken, and α represents either the coefficient on a vector of ones or the fixed effects specification. Standard errors are clustered by country and year. All coefficients have been multiplied by 100 for presentation, and standard errors are in parentheses. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable:	One-year change in log dividend yields				Two-year change in log dividend yields			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Democratization Start	9.28**	6.86*	9.01**	11.02***	12.41**	11.64**	12.76***	15.59***
	(4.18)	(3.84)	(4.20)	(4.04)	(5.80)	(5.15)	(4.54)	(4.00)
Country FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Year FE	No	Yes	No	No	No	Yes	No	No
Region × Year FE	No	No	Yes	No	No	No	Yes	No
Continent × Regime × Year FE	No	No	No	Yes	No	No	No	Yes
Event Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Episode obs.	72	72	71	68	69	69	68	65
R^2	0.01	0.11	0.28	0.26	0.01	0.13	0.30	0.28
Observations	6,334	6,334	5,969	6,122	6,208	6,208	5,839	5,992

Dependent variable:	Three-year change in log dividend yields				Four-year change in log dividend yields			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Democratization Start	17.12***	14.98***	17.42***	22.12***	18.61**	15.98**	16.22**	18.40**
	(5.81)	(5.53)	(6.28)	(6.62)	(8.47)	(7.48)	(7.42)	(8.64)
Country FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Year FE	No	Yes	No	No	No	Yes	No	No
Region × Year FE	No	No	Yes	No	No	No	Yes	No
Continent × Regime × Year FE	No	No	No	Yes	No	No	No	Yes
Event Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Episode obs.	67	67	66	63	65	65	64	61
R^2	0.01	0.13	0.32	0.30	0.01	0.14	0.35	0.33
Observations	6,083	6,080	5,707	5,855	5,961	5,960	5,583	5,730

yields around democratizations start years.

Finally, the increase in dividend yields in democratizations are almost entirely driven by price declines as shown in Figure B.1, which shows the combined log capital losses around democratizations and financial crises. Prices decline substantially in both events, corresponding to a 23.0% decline over 5 years around democratizations and a 32.4% decline around financial crises at the

Table B.6: Periods of democratization and log dividend yields

This table presents regressions of the level of the log dividend yield on indicator variables representing the start of a democratization. The specification estimated is

$$dp_{c,t} = \alpha + \beta \mathbb{1}_{c,t}\{\text{Democratization Start Year}\} + \epsilon_{c,t}$$

where dp is the log dividend yield and α represents either the coefficient on a vector of ones or the fixed effects specification. Standard errors are clustered by country and year. All coefficients have been multiplied by 100 for presentation, and standard errors are in parentheses. The estimated coefficients on financial crises are also reported for purpose of comparison. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable:	Level of log dividend yields			
	(1)	(2)	(3)	(4)
Democratization start	21.36**	13.42*	14.89**	12.72**
	(9.34)	(6.77)	(7.26)	(5.94)
Financial crisis start	14.23***	12.49**	7.07	6.29
	(4.50)	(4.88)	(5.23)	(5.20)
Country FE	No	Yes	Yes	Yes
Year FE	No	Yes	No	No
Region × Year FE	No	No	Yes	No
Continent × Regime × Year FE	No	No	No	Yes
Event Controls	Yes	Yes	Yes	Yes
Episode obs.	57	57	57	52
R^2	0.02	0.40	0.57	0.57
Observations	5,184	5,183	4,817	4,884

trough of each episode.

B.4 Alternative standard errors

In addition to being robust to other democratization indicators, the results are also robust to alternative choices for standard errors. In particular, one may be concerned that the overlapping observations introduced by using 5-year change in the log dividend yield may yield standard errors that are too small. To account for this, Table B.8 reproduces the exercise from Table 1 with with Driscoll-Kraay standard errors with a lag of 5 and clustered at the year level. The results remain significant at the 1% level.

B.5 VAR decomposed shocks

This section presents a vector autoregression (VAR) based estimate of discount rate shocks via the Campbell (1991) methodology. Realized returns can be decomposed into expected returns and

Table B.7: Peak-to-trough and maximum 5 year change

This table presents regressions of two peak-to-trough measures of the change in the log dividend yield on indicator variables representing the start of a democratization. The specification estimated is either

$$\max\{dp_{c,s}\}_{s=t-3}^{t+5} - \min\{dp_{c,s}\}_{s=t-8}^{t-4} = \alpha + \beta \mathbb{1}_{c,t}\{\text{Democratization Start Year}\} + \epsilon_{c,t}$$

or

$$\max\{dp_{c,s} - dp_{c,s-5}\}_{s=t-2}^{t+2} = \alpha + \beta \mathbb{1}_{c,t}\{\text{Democratization Start Year}\} + \epsilon_{c,t}$$

where dp is the log dividend yield and α represents either the coefficient on a vector of ones or the fixed effects specification. Standard errors are clustered by country and year. All coefficients have been multiplied by 100 for presentation, and standard errors are in parentheses. The estimated coefficients on financial crises are also reported for purpose of comparison. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable:	Peak-to-trough				Maximum 5-year change			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Democratization start	20.39*	22.53***	22.55***	15.78**	11.52*	13.84**	15.76**	16.52***
	(11.97)	(7.97)	(6.96)	(6.88)	(6.92)	(5.43)	(6.35)	(6.25)
Country FE	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Year FE	No	Yes	No	No	No	Yes	No	No
Region × Year FE	No	No	Yes	No	No	No	Yes	No
Continent × Regime × Year FE	No	No	No	Yes	No	No	No	Yes
Event Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Episode obs.	54	54	54	50	67	67	66	64
R^2	0.03	0.42	0.59	0.59	0.01	0.24	0.41	0.40
Observations	5,240	5,240	4,892	4,940	6,385	6,385	6,022	6,172

innovations to future expected cash flows and discount rates using the decomposition:

$$r_{t+1} = \mathbb{E}_t r_{t+1} + v_{t+1}^r \tag{B.1}$$

$$v_{t+1}^r = \eta_{t+1}^d - \eta_{t+1}^r \tag{B.2}$$

where

$$\eta_{t+1}^r \equiv (\mathbb{E}_{t+1} - \mathbb{E}_t) \sum_{j=1}^{\infty} \rho^j r_{t+1+j} \tag{B.3}$$

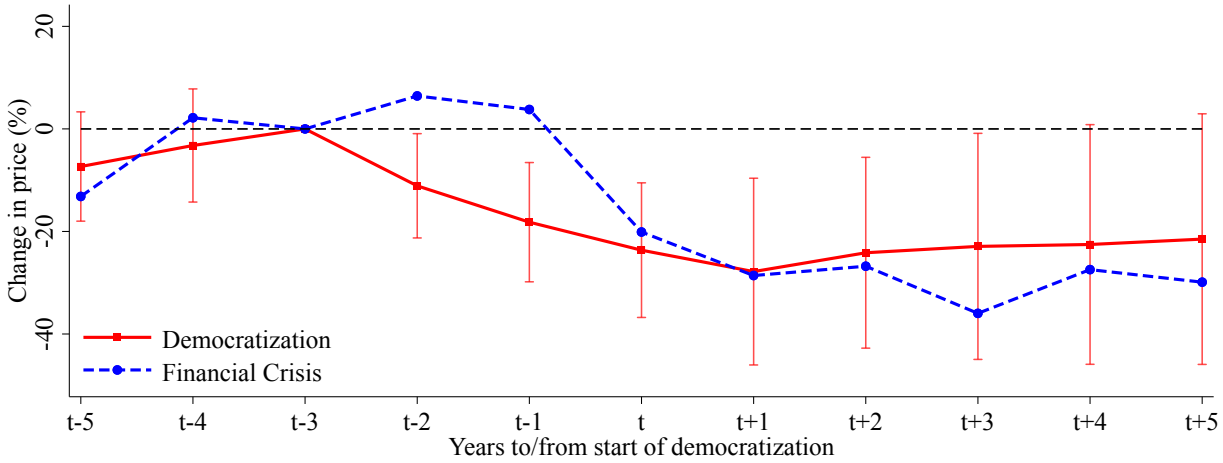
are discount rate shocks,

$$\eta_{t+1}^d \equiv (\mathbb{E}_{t+1} - \mathbb{E}_t) \sum_{j=1}^{\infty} \rho^{j-1} \Delta d_{t+j} \tag{B.4}$$

are cash flow shocks and $\rho \equiv \frac{\overline{pd}}{1+\exp\{\overline{pd}\}}$ as in Campbell and Shiller (1988) where $\overline{pd}$ is the average log price-dividend ratio. The discount rate and cash flow shocks given in Equations (B.3) and

Figure B.1: Change in log prices in democratizations

This figure presents an event study of log prices around the start of a democratization and a financial crisis. Estimates are relative to the value three years prior to the event start to allow for the possibility that financial markets incorporate information about the events earlier than the start. Endpoints (not shown) are binned. To be sure the series is consistent across observations, only prices from GFD's main data series are plotted. The red bars on the democratization line represents a 90% confidence interval of the point estimates with standard errors clustered by country and year.



(B.4) can be estimated directly by assuming a process for discount rates and cashflows. To do this, I assume a first-order VAR structure for log cum-dividend returns, dividend growth, consumption growth, government bond yields, and capital gains given by

$$\tilde{\mathbf{X}}_{t+1} = \mathbf{\Phi}\tilde{\mathbf{X}}_t + \mathbf{w}_{t+1} \tag{B.5}$$

where $\tilde{\mathbf{X}}_t = \mathbf{X}_t - \bar{\mathbf{X}}$ and $\mathbf{X}_t$ is the data vector with cum-dividend returns, r_t, in the first position.[32] Now, define $\mathbf{e}_1$ as an elementary column vector with a 1 in the first position and 0s elsewhere, meaning that Equation (B.2) can be written as $v^r_{t+1} = \mathbf{e}_1'\mathbf{w}_{t+1}$. Under the assumed VAR structure, Equation (B.3) becomes

$$\eta^r_{t+1} = \lambda'\mathbf{w}_{t+1}. \tag{B.6}$$

[32]To estimate the vector autoregression, I use the combination of control variables that give the largest sample. For example, if I have 100 cum-dividend returns observations, 100 dividend growth observations, and 80 riskfree rate observations, I will estimate the VAR using only cum-dividend returns and dividend growth.

Table B.8: Democratizations and the change in log dividend yields, Driscoll-Kraay Standard Errors

This table presents regressions of the 5-year change in log dividend yields on indicator variables representing the start of a democratization. The specification estimated is

$$dp_{c,t} - dp_{c,t-5} = \alpha + \beta \mathbb{1}_{c,t}\{\text{Democratization Start Year}\} + \epsilon_{c,t}$$

where dp is the log dividend yield and α represents either the coefficient on a vector of ones or the fixed effects denoted at the bottom of the table. Standard errors correct for autocorrelation in the dependent variable using the method of Driscoll and Kraay (1998) and are clustered by year. All coefficients have been multiplied by 100 for presentation, and standard errors are in parentheses. The same results for financial crises are included for purpose of comparison. In Columns (3) and (4) some observations are lost due to there only being one observation in a region-year or in a continent-regime-year. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable:	Five-year change in log dividend yields			
	(1)	(2)	(3)	(4)
Democratization start	17.97***	19.79***	23.13***	26.34***
	(6.22)	(5.39)	(5.54)	(8.18)
Financial crisis	13.67***	16.07***	10.23*	10.96*
	(5.15)	(4.42)	(5.35)	(5.98)
Country FE	No	Yes	Yes	Yes
Year FE	No	Yes	No	No
Region × Year FE	No	No	Yes	No
Continent × Regime × Year FE	No	No	No	Yes
Event Controls	Yes	Yes	Yes	Yes
Episode obs.	64	64	63	60
R^2	0.01	0.01	0.01	0.01
Observations	6,040	6,040	5,663	5,813

where $\lambda' \equiv \mathbf{e}_1'\rho\mathbf{\Phi}(\mathbf{I} - \rho\mathbf{\Phi})^{-1}$. Combining Equations (B.2) and (B.6) gives the cashflow shock as

$$\eta^d_{t+1} = (\mathbf{e}_1' + \lambda')\mathbf{w}_{t+1}. \tag{B.7}$$

The cashflow and discount rate shocks are, therefore, immediately given after estimating the VAR coefficients and residuals.

The first three columns of Table B.9 shows that large cumulative discount rate shocks are concentrated around democratization starts. Column (1) shows that the combined discount rate shock in the 3-years before, year of, and 3-year after a democratization start is 4.6 percentage points, in line with the findings from dividend yields. Adding year and country fixed effects reduces the cumulative rise in discount rates to 3.7 percentage points, but rises to 5.8 percentage points after region-year fixed effects are added.

Table B.9: Democratizations, discount rate shocks, and cashflow shocks

This table presents regressions of cumulative discount rate and cash flow shocks estimated from a vector autoregression on indicator variables for democratization starts. The regressions estimated take the form

$$\sum_{j=-3}^{3} \eta^{r}_{c,t+j} = \alpha + \beta \mathbb{1}_{c,t}\{\text{Democratization Start}\} + \epsilon_{c,t}.$$

The discount rate and cash flow shock variables are winsorized at the 1% and 99% levels. Standard errors are clustered by country and year are in parentheses. All coefficients have been multiplied by 100.

Dependent variable:	Discount rate shocks			Cashflow shocks		
	(1)	(2)	(3)	(4)	(5)	(6)
Democratization Start	4.64**	3.73*	5.84**	-12.68	-4.51	-0.05
	(2.04)	(2.22)	(2.60)	(7.70)	(7.26)	(5.71)
Country FE	No	Yes	Yes	No	Yes	Yes
Year FE	No	Yes	No	No	Yes	No
Region × Year FE	No	No	Yes	No	No	Yes
Event Controls	Yes	Yes	Yes	Yes	Yes	Yes
Episode obs.	68	68	66	68	68	66
R^2	0.01	0.20	0.33	0.01	0.34	0.54
Observations	6,273	6,273	6,011	6,273	6,273	6,011

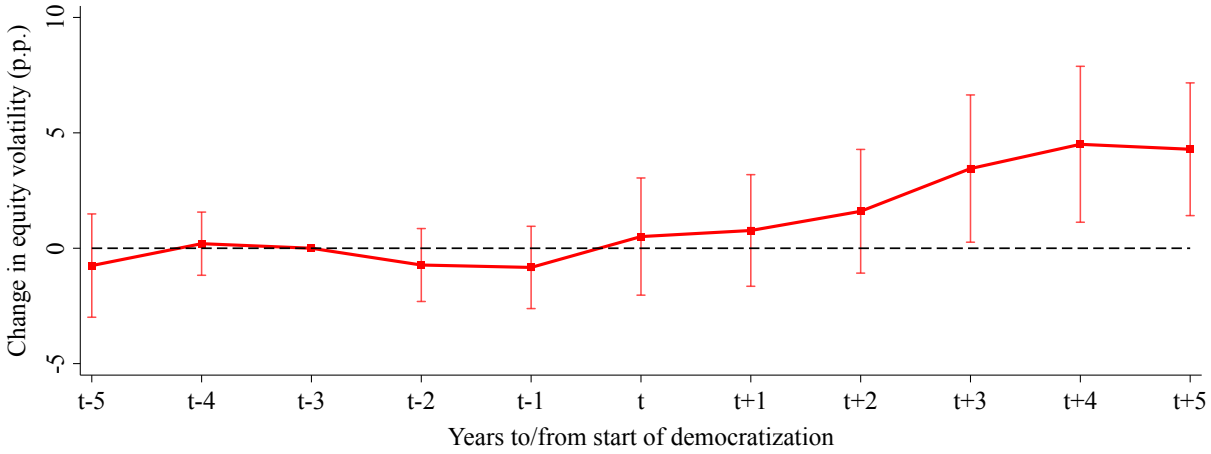
Supporting the view that changes in discount rates drive the changes in prices that occur during democratizations, Table B.9 also shows the results for the VAR decomposed cash flow shocks. The cashflow shocks decomposed from the VAR are more volatile than the discount rate shocks, and therefore are accompanied by less precise estimates. None of the columns indicate a statistically significant change in expected cashflows. Column (4) comes along with large point estimates, but this is mostly driven by region-year variation, as the Column (6) estimate is very close to 0. These results highlight that discount rate shocks seem to be driving the results in Section 3.

B.6 Equity volatility

Figure B.2 shows that equity volatility is elevated during democratizations, where equity volatility is the 10-year moving standard deviation of realized equity returns. While the model in Section 6 does not produce this results (it could by adding time-variation in either μ or Z within the democratization state), this provides additional support that democratizations are risky periods for investors.

Figure B.2: Democratizations and equity volatility

This figure shows an event study plot of the 10-year moving standard deviation of realized returns around democratization starts. Country and year fixed effects are included and standard errors are clustered by country and year. A 90% confidence interval is reported.



B.7 Corporate bond yields

The final proxy for changes in discount rates I employ is corporate bond yields, which is also used by Muir (2017). When risk premia rise, so do corporate bond yields, making them a valid proxy for risk premia. These results should be interpreted carefully, however, as they come from only 11 democratization episodes. Table B.10 shows that the five-year change in log corporate bond yields is also large, statistically significant, and similar in magnitude to the estimates from Section 3.

B.8 Additional evidence on cashflow stability

Section 3.2 presented evidence on log GDP per capita growth for all countries whereas Section 3.1 presented evidence for only countries with data on dividend yields. To show the growth results are identical in both all countries and the subset of countries with data on dividend yields, Table B.11 presents the growth results either 5 or 10 years after a democratizations start. They are similar to those presented in the main text and are, if anything, tilted toward higher, not lower, growth.

Figure B.3 presents an event study plot of a three-year moving average of log dividend growth and log GDP per capita around democratization starts. Log dividend growth displays negative

Table B.10: Democratizations and corporate bond yields

This table presents regressions of the 5-year change in log corporate bond yields on indicator variables representing the start of a democratization. The specification estimated is

$$y_{c,t} - y_{c,t-5} = \alpha + \beta \mathbb{1}_{c,t}\{\text{Democratization Start Year}\} + \epsilon_{c,t}$$

where y is the log corporate bond yield and α represents either the coefficient on a vector of ones or the fixed effects denoted at the bottom of the table. Standard errors are clustered by country and year and are in parentheses. All coefficients have been multiplied by 100 for presentation. In Columns (3) and (4) some observations are lost due to there only being one observation in a region-year or in a continent-regime-year. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable:	Five-year change in log corporate bond yields			
	(1)	(2)	(3)	(4)
Democratization start	12.99*	10.91***	14.08**	20.00*
	(7.05)	(3.33)	(6.52)	(11.16)
Country FE	No	Yes	Yes	Yes
Year FE	No	Yes	No	No
Region $\times$ Year FE	No	No	Yes	No
Continent $\times$ Regime $\times$ Year FE	No	No	No	Yes
Event Controls	Yes	Yes	Yes	Yes
Episode obs.	11	11	10	8
R^2	0.02	0.54	0.62	0.61
Observations	1,422	1,407	1,311	1,211

point estimates after the start of a democratization, but none are statistically different than 0 at conventional levels of significance. This stands in contrast to large declines in dividend growth during financial crises with point estimates indicating average dividend growth of -12% in the three years after the financial crisis start.[33]

GDP per capita also declines slightly prior to the democratization start, but all of the effects are offset 5-years into the episode and the decline is not statistically different than 0. This stands in contrast to financial crises, which see lower GDP per capita for at least 5-years after the episode start.

We can also see similar results to those reported in Section 3.2 when examining realized GDP growth and cashflow growth in the 10 years after a democratization start, as shown in Table B.12. GDP growth is significantly positive now in the specification without fixed effect, but not statistically different than 0 once fixed effects are added. Dividend growth shows negative point estimates

[33]Note, these values are benchmarked to the average growth 3 years prior to the episode start, which is 2.8% for democratizations and 3.2% for financial crises. Both these numbers are slightly above average log dividend growth in the data.

Table B.11: Democratizations and growth, Dividend yield sample

This table presents regressions of log GDP per capita growth on indicator variables denoting if the year is in the first 5 or 10 years of a democratization. The regressions estimated take the form

$$\text{log GDP per capita growth}_{c,t} = \alpha + \beta \mathbb{1}_{c,t}\{\text{First 5 or 10 years of Democratization}\} + \epsilon_{c,t}$$

where α represents either the coefficient on a vector of ones or the fixed effects denoted at the bottom of the table. Standard errors are clustered by country and year. All coefficients have been multiplied by 100 for presentation, and standard errors are in parentheses. In Columns (3) and (6) some observations are lost due to there only being one observation in a region-year. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable:	Log GDP per capita growth			Log dividend growth		
	(1)	(2)	(3)	(4)	(5)	(6)
Democratization, 5-years	0.82*	0.54	0.49			
	(0.45)	(0.41)	(0.41)			
Democratization, 10-years				0.86***	0.39	0.24
				(0.33)	(0.31)	(0.33)
Country FE	No	Yes	Yes	No	Yes	Yes
Year FE	No	Yes	No	No	Yes	No
Region $\times$ Year FE	No	No	Yes	No	No	Yes
Event Controls	Yes	Yes	Yes	Yes	Yes	Yes
Episode obs.	363	363	358	732	732	721
R^2	0.04	0.24	0.40	0.04	0.23	0.40
Observations	6,082	6,082	5,693	6,082	6,082	5,693

across specifications, but are also not statistically different than 0.

B.9 Additional evidence on political risk

This subsection presents additional evidence that an increase in generic political risk is not driving the increase in risk premia observed in democracy. In particular, Table B.13 examines the increase in log dividend yields in democratization years that occur in the subsample of ICB crisis years. Democratizations within ICB crises display approximately a 22.7–25.7% larger increase in dividend yields that other ICB crisis events depending on the fixed effects employed. This provides additional evidence that, indeed, there is something special about democratizations above and beyond a generic increase in political risk or uncertainty.

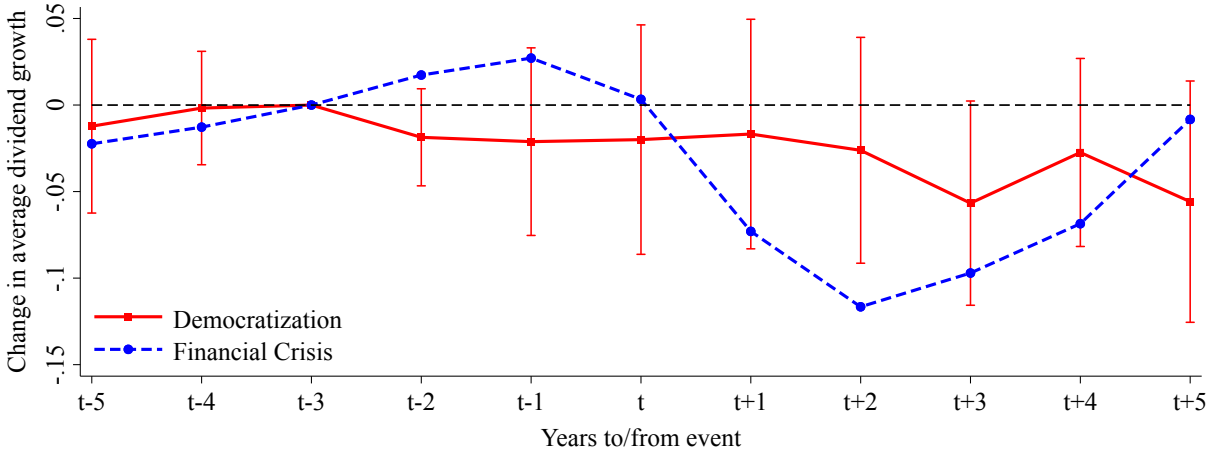
B.10 Additional evidence addressing uncertainty

Evidence that a generic increase in uncertainty cannot explain the results is supported by Table B.14 which shows the evolution of investment-capital ratios and the human capital index from the Penn World Tables around democratization starts. Consistent with an increase in discount rates

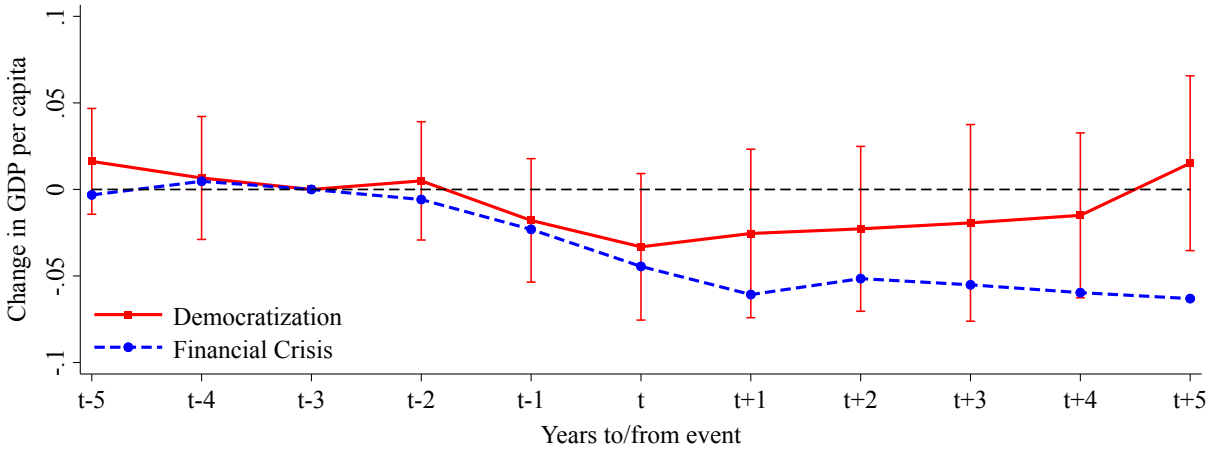
Figure B.3: Log dividend growth and GDP growth in democratizations

This figure presents an event study of a three-year moving average of log dividend growth and log GDP per capita around the start of a democratization and a financial crisis. Estimates are relative to the value three years prior to the event start. Endpoints (not shown) are binned. The red bars on the democratization line represents a 90% confidence interval of the point estimates with standard errors clustered by country and year.

A. Log dividend growth



B. Log GDP per capita



for investors, investment-capital ratios decline at the start of democratizations and then slowly rebound. Conversely, human capital, which is the primary asset of the lower and middle classes, rises as the prospect of democracy becomes more likely. The potential for democracy represents a positive shock to the value of human capital for these groups, not a period of uncertainty, leading

Table B.12: Democratizations, growth, and cash flows

This table presents regressions of log GDP per capita and dividend growth on indicator variables denoting if the year is in the first 10 years of a democratization. The regressions estimated take the form

$$\text{Cash Flow Growth}_{c,t} = \alpha + \beta \mathbb{1}_{c,t}\{\text{First 10 years of Democratization}\} + \epsilon_{c,t}$$

where α represents either the coefficient on a vector of ones or the fixed effects denoted at the bottom of the table. Standard errors are clustered by country and year. All coefficients have been multiplied by 100 for presentation, and standard errors are in parentheses. In Columns (3) and (6) some observations are lost due to there only being one observation in a region-year. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable:	Log GDP per capita growth			Log dividend growth		
	(1)	(2)	(3)	(4)	(5)	(6)
Democratization, 10-years	0.49**	0.20	0.11	-0.71	-2.67	-1.75
	(0.21)	(0.22)	(0.21)	(1.60)	(1.74)	(1.64)
Financial Crisis, 10-years	-0.11	-0.25	0.03	-2.29*	-2.41**	-1.39
	(0.19)	(0.19)	(0.18)	(1.24)	(1.21)	(1.12)
Country FE	No	Yes	Yes	No	Yes	Yes
Year FE	No	Yes	No	No	Yes	No
Region × Year FE	No	No	Yes	No	No	Yes
Event Controls	Yes	Yes	Yes	Yes	Yes	Yes
Episode obs.	2313	2313	2303	728	728	712
R^2	0.02	0.11	0.23	0.01	0.12	0.30
Observations	18,222	18,222	18,017	6,051	6,051	5,563

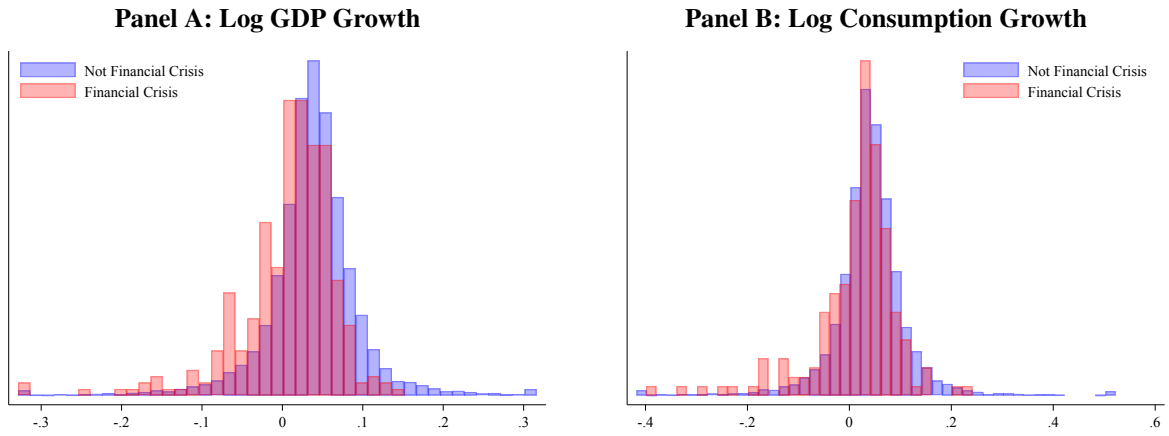
Table B.13: Democratizations in ICB Crises

This table presents the 5-year change in log dividend yields in the sample of ICB crises. Fixed effects are applied first to the 5-year change in log dividend yields, and then the following regression is run: Standard errors are heteroskedasticity robust.***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Dependent variable:	5-year change in log dividend yields			
	(1)	(2)	(3)	(4)
Democratization	25.74**	23.67***	24.16***	22.66**
	(10.32)	(8.46)	(8.73)	(9.34)
Country FE	No	Yes	Yes	Yes
Year FE	No	Yes	No	No
Region × Year FE	No	No	Yes	No
Continent × Regime × Year FE	No	No	No	Yes
Episode obs.	20	20	18	20
R^2	0.02	0.02	0.04	0.03
Observations	150	150	129	147

Figure B.4: Distribution of GDP and consumption in financial crises

Log GDP and consumption growth are winsorized at the 0.25% and 99.75% level. GDP data come from the Maddison Historical Statistics database. Consumption data come from the Penn World Tables and represent the period from 1945 to 2018.



to an increase in their investment in skills.

Moreover, Figure B.5 shows the separate evolution of these two series in an event study plot. In the years prior to the democratization, human capital and physical capital were trending closely and were relatively stable. After the democratization begins, however, the two series begin to diverge, with investment-capital ratios falling by 10%. This decline, is the primary cause of the small decline in GDP per capita observed at the start of the democratization. However, this is offset to some degree by the rise in human capital.

C Quasi-natural experiment appendix

C.1 Anti-regime Civil Society Organizations and democratizations

Figure C.6 shows that anti-regime civil society organization (CSO) activity is a key predictor of future democratizations. In particular, this figure estimates a linear probability model including both lagged anti-regime CSO activity and democratic mobilizations where the dependent variable is equal to 1 if it is a democratization year for a given country. The number of lags is shown on the x-axis. Here, we see that anti-regime CSO activity is (1) a significant predictor of future democratizations and (2) outperforms democratic protests substantially at longer horizons between 5 to 20 years. This is important as anti-regime CSO activity spikes during the treatment period in

Table B.14: Democratizations, physical capital, and human capital

This table presents regressions of the 3 year change in log investment-capital ratios and log human capital index from the Penn World Tables on indicator variables representing the start of a democratization. Both variables have been standardized by subtracting the mean 3 year change and dividing by the standard deviation of the 3 year change of each variable. The specification estimated is either

$$y_{c,t} - y_{c,t-3} = \alpha + \beta \mathbb{1}_{c,t}\{\text{Democratization Start Year}\} + \epsilon_{c,t}$$

where y is either the standardized log investment-capital or human capital index and α represents either the coefficient on a vector of ones or the fixed effects specification. Standard errors are clustered by country and year. All coefficients have been multiplied by 100 for presentation, and standard errors are in parentheses. The estimated coefficients on financial crises are also reported for purpose of comparison. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

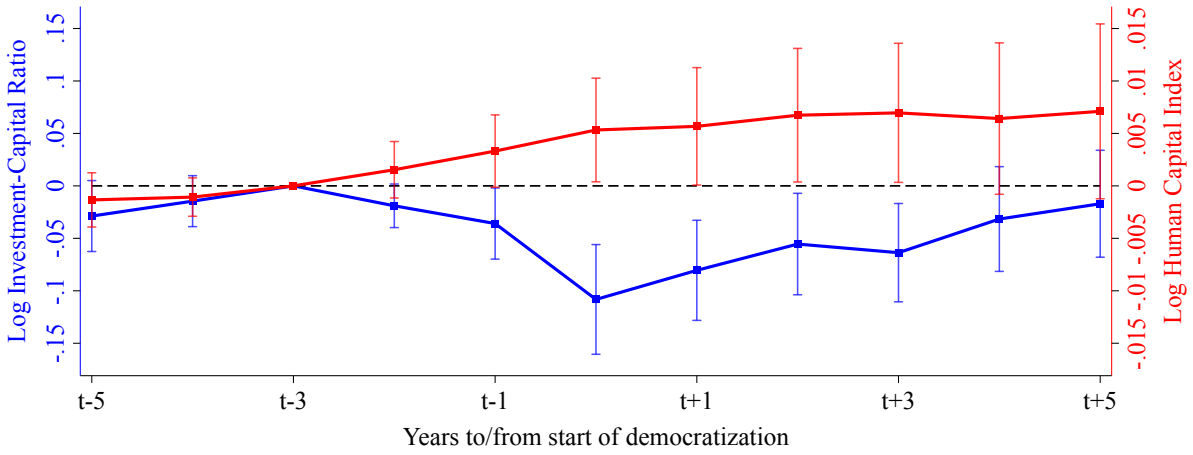
Dependent variable:	Three-year change in log investment-capital ratio			
	(1)	(2)	(3)	(4)
Democratization start	-0.16*	-0.18**	-0.15**	-0.24***
	(0.09)	(0.08)	(0.07)	(0.07)
Country FE	No	Yes	Yes	Yes
Year FE	No	Yes	No	No
Region × Year FE	No	No	Yes	No
Continent × Regime × Year FE	No	No	No	Yes
Event Controls	Yes	Yes	Yes	Yes
Episode obs.	155	155	151	155
R^2	0.01	0.07	0.18	0.16
Observations	8,975	8,975	8,904	8,963

Dependent variable:	Three-year change in log human capital index			
	(1)	(2)	(3)	(4)
Democratization start	0.25***	0.27***	0.18**	0.20**
	(0.09)	(0.08)	(0.07)	(0.09)
Country FE	No	Yes	Yes	Yes
Year FE	No	Yes	No	No
Region × Year FE	No	No	Yes	No
Continent × Regime × Year FE	No	No	No	Yes
Event Controls	Yes	Yes	Yes	Yes
Episode obs.	127	127	123	127
R^2	0.02	0.29	0.39	0.36
Observations	8,061	8,061	7,990	8,049

majority Catholic autocracies from 1959–1963.

Figure B.5: Physical and human capital in democratizations

This figure shows an event study plot of investment-capital ratios and the human capital index around democratization starts. Estimates are relative to the value three years prior to the democratization start. Endpoints (not shown) are binned. The red bars on the democratization line represents a 90% confidence interval of the point estimates with standard errors clustered by country and year.



C.2 The First Vatican Council

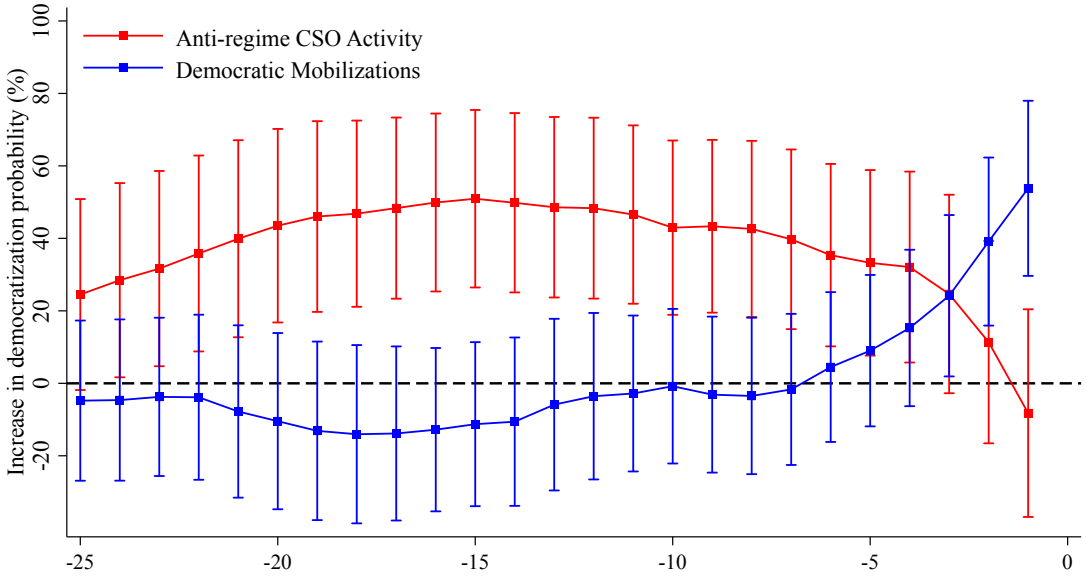
One potential concern is that the results are driven by the change in Catholic church doctrine, and have nothing to do with an increases probability of democratization. To assess the validity of this challenge, I estimate the difference-in-differences specifications on another major change in Catholic church doctrine: the First Vatican Council of 1868–1870 (Vatican-I). Vatican-I is distinct from Vatican-II in that it reaffirmed the Church's rejection of liberalism and democratic principles. As such, it serves as an excellent test of whether changes in religious doctrine, in general, lead to high risk premia. For the estimation window, I use all years from 1864–1870, as Vatican-I was announced in 1864. Once again, two sample windows are estimated: one 15 year symmetric window from 1849–1885, as to place the Revolutions of 1848 outside the sample, and one symmetric 20 year window from 1844–1890. All countries that are not majority Catholic autocracies are used as the control group. The results, reported in Table C.15, display negative, insignificant point estimates in both specifications. This is consistent with the theory underlying the shock: The Vatican-I likely reduced the probability of democratization, thereby reducing risk premia. It also supports that changes in Catholic doctrine do not generally raise risk premia.

Figure C.6: Predicting democratizations with anti-regime CSO activity vs. democratic mobilizations

This figure presents the the coefficients from a linear probability model of the form

$$\mathbb{1}\{\text{Democratization}\}_{c,t} = \gamma_t + \eta_c + \beta_1 \text{Anti-regime CSO}_{c,t-h} + \beta_2 \text{Democratic Mobilization}_{c,t-h} + \varepsilon_{c,t} \quad \text{(C.1)}$$

estimated on the post-1960 sample. Each coefficient is scaled by the unconditional probability of being in a democratization year. Standard errors are clustered by country and year.



C.3 Shifting the treatment window

This section presents an additional falsification test coming from shifting the treatment window. Figure C.7 presents the results. This falsification test indicates that estimating the difference-in-differences specifications would only have yielded significant results in a narrow range of years. Moreover, the results shifting forward by 1 to 4 years are made stronger by the realized negative returns entering the pre-period estimation, as shown in Figure 5. Without this, shifting the treatment window forward would have yielded insignificant results more quickly.

C.4 Estimation end date

The end year of the estimation window in Section 4 is chosen such that the sample is symmetric about the treatment window. However, other choices for end years may be reasonable. To show that the results for each specification are robust to different choices, I provide the point estimate

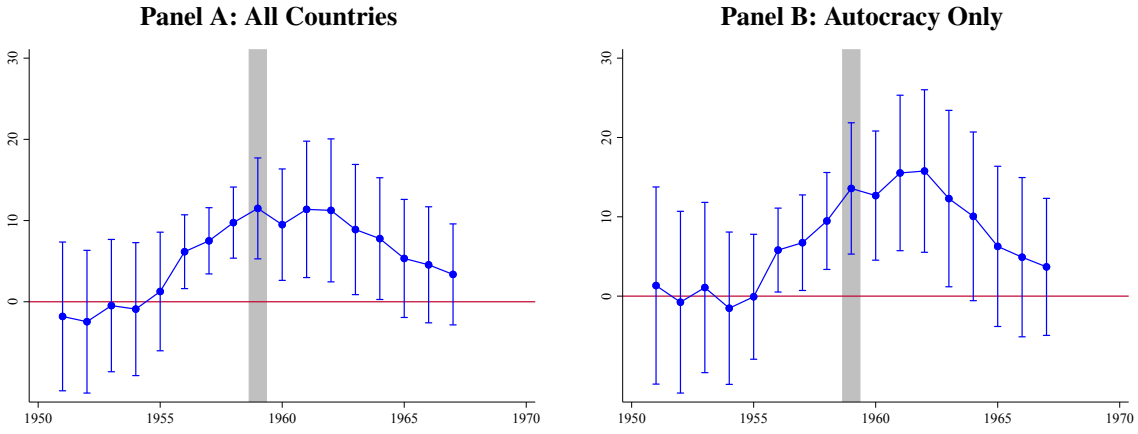
Table C.15: Difference-in-Differences — First Vatican Council

This table shows the regression coefficients of a difference-in-differences regression given by Equation (4.1). In each regression, 1864–1870 are the years of treatment and are excluded. Standard errors are clustered by country and year. Included countries must have at least 20 observations from 1844–1890. All coefficients have been multiplied by 100, and standard errors are in parentheses.

	All Countries	
	(1)	(2)
Majority Catholic Autocracy × Post	-4.89	-5.49
	(4.50)	(3.70)
Country FE	Yes	Yes
Year FE	Yes	Yes
Controls	Yes	Yes
Sample	1849–1885	1844–1890
R^2	0.15	0.12
Observations	499	644

Figure C.7: Dropping every country pair, 1946–1976

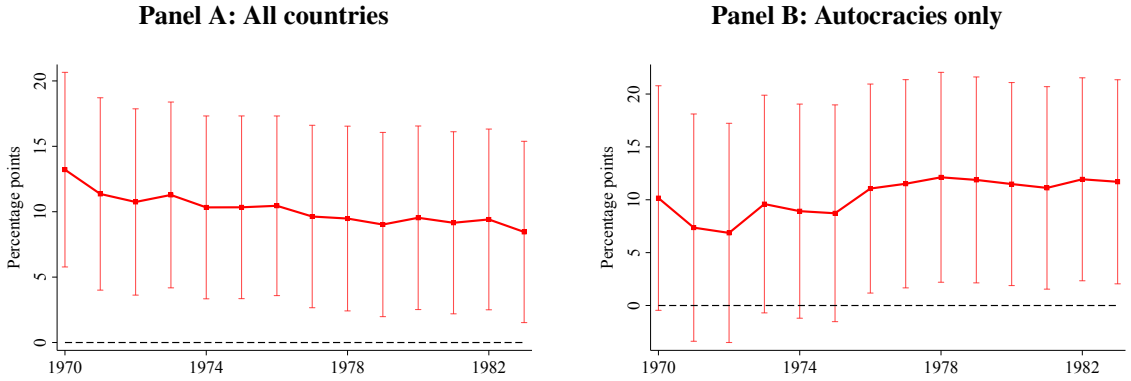
This figure estimates the specification from Equations (4.1) on different treatment windows. The x-axis represents the treatment start year. The treatment years contain the start year plus 4 additional years, and are excluded from each regression The sample period is always a symmetric 13-year window around the treatment years and estimates for two different samples, one for all countries (Panel A) and the other on autocracies only (Panel B), are reported. Excess returns are adjusted for global and continental risk using the two-factor risk model described by Equation (4.2). Standard errors are clustered by country and year. Included countries must have at least 20 observations from 1946–1983. All coefficients have been multiplied by 100, and standard errors are in parentheses. The controls used are a series of "event controls" meaning indicator variables for whether there is a war, financial crisis, recession, first 5-years of a sovereign default, a head of government death, and ICB political crisis, democratization, or coup d'etat. In addition to the event controls, I also control for log GDP per capita.



and 95% confidence interval for each specification with the estimation window ending in each year from 1970–1983, shown in Figure C.8. For the specification where all countries are included, all

Figure C.8: Different estimation window end dates

This figure estimates the specification from Equations (4.1) on different window end dates and reports the point estimates and 95% confidence interval for the treatment effect. The sample period starts in 1946 and the x-axis denotes the end year. Two samples, one for all countries (Panel A) and the other on autocracies only (Panel B), are reported. Excess returns are adjusted for global and continental risk using the two-factor risk model described by Equation (4.2). Standard errors are clustered by country and year. Included countries must have at least 20 observations from 1946–1983. The controls used are a series of "event controls" meaning indicator variables for whether there is a war, financial crisis, recession, first 5-years of a sovereign default, a head of government death, and ICB political crisis, democratization, or coup d'etat. In addition to the event controls, I also control for log GDP per capita.



of the point estimates are significant at the 95% level, and decline as the post-treatment window moves further in the future, suggesting a gradual resolution of the increased risk premia over time. In the autocracies only sample, the results become significant in 1976 as more observations enter the sample and the post-treatment effects become more precisely estimated. Moreover, the treatment effect seems to be stable at more years are included.

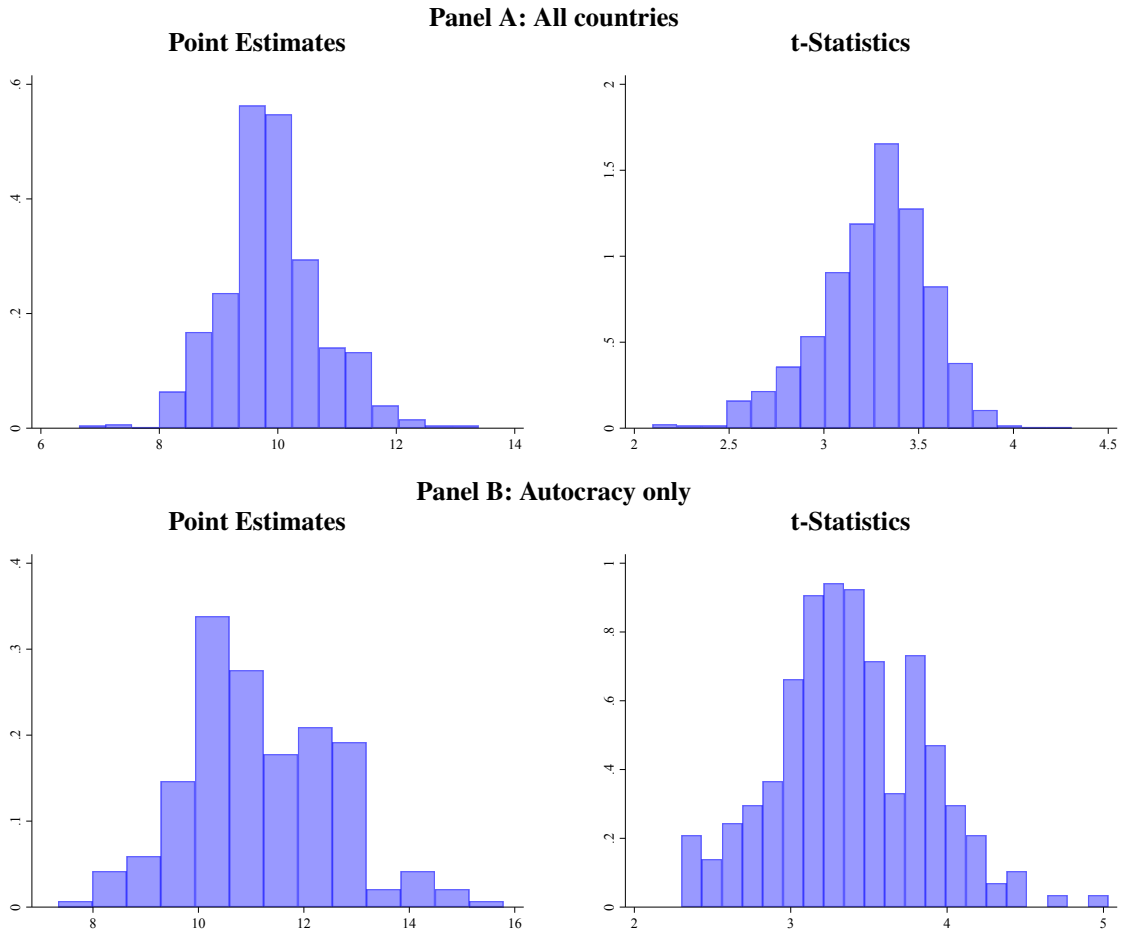
Different estimation windows

C.5 Dropping every country pair

To assure the results are not driven by any one or two countries, I estimate all specifications excluding every possible combination of countries. This means that each regression is estimated on 41 countries from 1946–1976. Figure C.9 shows the results. No pairs of countries drive the results, which are strongly significant in every specification. For the all countries specification, the point estimates range from 6 to 12 percentage points and all are significant at the 5% level. Similar results hold for the autocracies only specifications with estimates between 7 to 15 percentage points and all significant at the 5% level.

Figure C.9: Dropping every country pair, 1946–1976

This figure estimates the specification from Equations (4.1) excluding each possible country pair. The sample period is from 1946–1976 and estimates for two different samples, one for all countries (Panel A) and the other on autocracies only (Panel B), are reported. In each regression, 1959 to 1963 are the years of treatment and are excluded. Excess returns are adjusted for global and continental risk using the two-factor risk model described by Equation (4.2). Standard errors are clustered by country and year. Included countries must have at least 20 observations from 1946–1983. All coefficients have been multiplied by 100. The controls used are a series of "event controls" meaning indicator variables for whether there is a war, financial crisis, recession, first 5-years of a sovereign default, a head of government death, and ICB political crisis, democratization, or coup d'etat. In addition to the event controls, I also control for log GDP per capita.

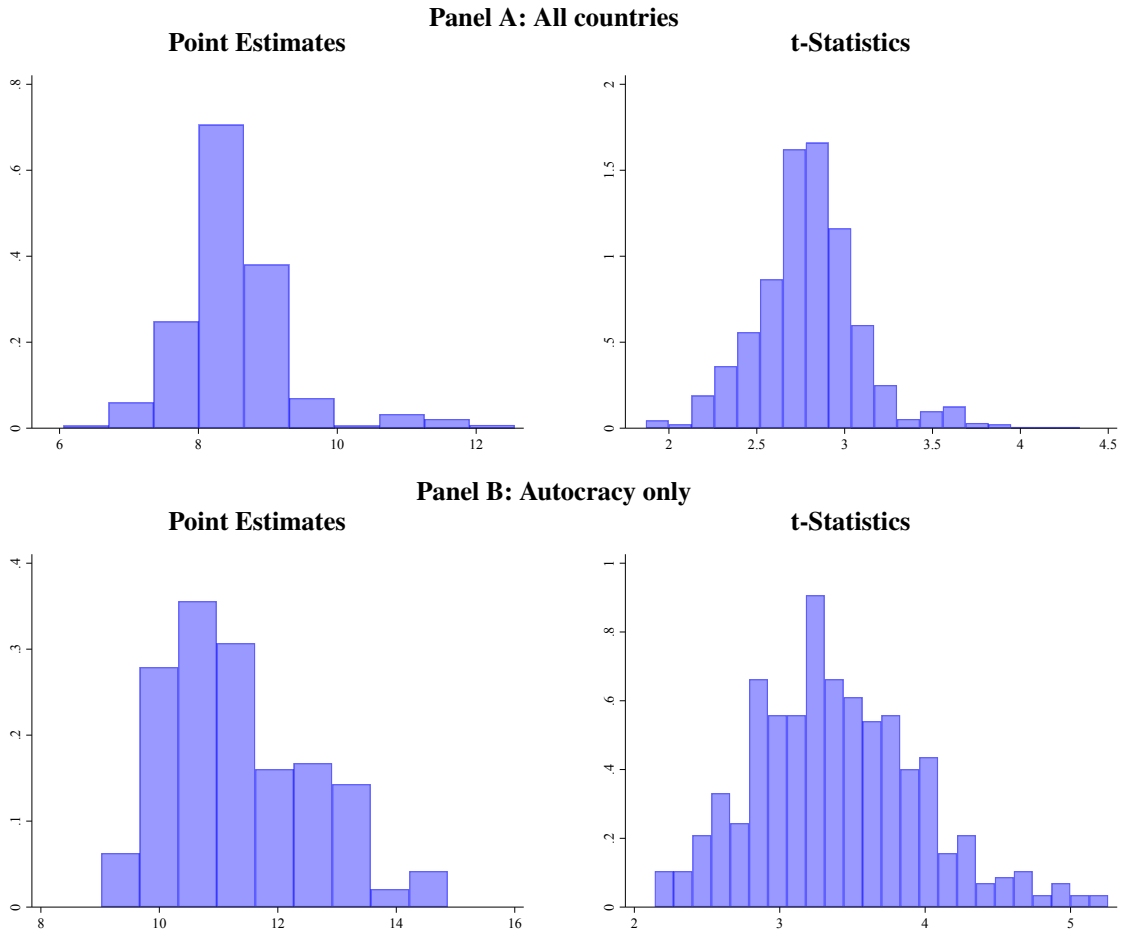


C.6 Extreme values driving the results

The results reported in Section 4 are somewhat large when compared to the results found in the panel regressions. Some of this could be due to anomalously high returns in the post period, in particular in the years 1967–1969. To show how removing these outliers affects the results, I use

Figure C.10: Dropping every country pair, 1939–1983

This figure estimates the specification from Equations (4.1) excluding each possible country pair. The sample period is from 1939–1983 and estimates for two different samples, one for all countries (Panel A) and the other on autocracies only (Panel B), are reported. In each regression, 1959 to 1963 are the years of treatment and are excluded. Excess returns are adjusted for global and continental risk using the two-factor risk model described by Equation (4.2). Standard errors are clustered by country and year. Included countries must have at least 20 observations from 1946–1983. All coefficients have been multiplied by 100. The controls used are a series of "event controls" meaning indicator variables for whether there is a war, financial crisis, recession, first 5-years of a sovereign default, a head of government death, and ICB political crisis, democratization, or coup d'etat. In addition to the event controls, I also control for log GDP per capita.



three different methods: (1) winsorizing at the 5% and 10% levels, (2) removing the three highest return years from 1967–1969, and (3) using outlier robust regression via Li (2006).

In the winsorized results, the global and continental risk-adjusted returns are truncated at the 5th and 95th percentiles and the 10th and 90th percentiles. The results are shown in Table C.16. The results are still highly statistically significant and have lower point estimates, pointing to a

Table C.16: Difference-in-differences — Removing outliers

This table shows the regression coefficients for the difference-in-differences specification in Equation (4.1) on two sample windows, one from 1946–1976 and the other from 1939–1983, and for two different samples, one for all countries and the other on autocracies only. In each regression, 1959 to 1963 are the years of treatment and are excluded. Excess returns are adjusted for global and continental risk using the two-factor risk model described by Equation (4.2). Standard errors are clustered by country and year. Included countries must have at least 20 observations from 1946–1983. All coefficients have been multiplied by 100, and standard errors are in parentheses. The controls used are a series of "event controls" meaning indicator variables for whether there is a war, financial crisis, recession, first 5-years of a sovereign default, a head of government death, and ICB political crisis, democratization, or coup d'etat. In addition to the event controls, I also control for log GDP per capita. The first two columns present results winsorized at the 5% threshold. Columns (3) and (4) present results winsorized at the 10% threshold, and Columns (5) and (6) present results with 1967–1969 excluded. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

	Winsorized at 5% and 95%		Winsorized at 10% and 90%		Excluding 1967–1969	
	(1)	(2)	(3)	(4)	(5)	(6)
Majority Catholic × Post	7.47***	6.01**	6.55***	5.35**	8.84***	10.15**
	(2.50)	(2.39)	(2.02)	(2.05)	(3.13)	(3.59)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Sample	1946–1976	1946–1976	1946–1976	1946–1976	1946–1976	1946–1976
R^2	0.13	0.15	0.13	0.15	0.14	0.18
Observations	1,069	557	1,069	557	940	449

	Winsorized at 5% and 95%		Winsorized at 10% and 90%		Excluding 1967–1969	
	(1)	(2)	(3)	(4)	(5)	(6)
Majority Catholic × Post	4.24**	6.61***	4.06**	5.75***	4.24*	7.95**
	(1.84)	(1.94)	(1.62)	(1.72)	(2.50)	(2.88)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Sample	1939–1983	1939–1983	1939–1983	1939–1983	1939–1983	1939–1983
R^2	0.09	0.14	0.09	0.14	0.09	0.15
Observations	1,592	736	1,592	736	1,463	673

4 to 7.5 percentage point treatment effect, indicating that about one-third of the treatment effect reported in the main text is coming from anomalously large observations. Table C.16 also shows the results from excluding the high return years. These three years do not seem to be driving the results and, when removed, the estimated treatment effect is between 4 to 10 percentage points.

Table C.17 uses outlier robust regression weights via Li (2006) and finds, similar to the results above, a treatment effect of 6–7.5 percentage points. These results indicate that approximately

Table C.17: Difference-in-differences — Outlier robust weights

This table shows the regression coefficients for the difference-in-differences specification in Equation (4.1) on two sample windows, one from 1946–1976 and the other from 1939–1983, and for two different samples, one for all countries and the other on autocracies only. Robust regression weights are constructed as suggested in Li (2006) using a biweight tuning constant equal to 7, meaning observations in excess of seven times the median absolute deviation from the median residual are down-weighted. In each regression, 1959 to 1963 are the years of treatment and are excluded. Excess returns are adjusted for global and continental risk using the two-factor risk model described by Equation (4.2). Standard errors are clustered by country and year. Included countries must have at least 20 observations from 1946–1983. All coefficients have been multiplied by 100, and standard errors are in parentheses. The controls used are a series of "event controls" meaning indicator variables for whether there is a war, financial crisis, recession, first 5-years of a sovereign default, a head of government death, and ICB political crisis, democratization, or coup d'etat. In addition to the event controls, I also control for log GDP per capita. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

	All countries		Autocracies only	
	(1)	(2)	(3)	(4)
Majority Catholic × Post	6.40**	6.03***	6.73**	7.43***
	(2.42)	(2.02)	(3.17)	(2.09)
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Sample	1946–1976	1939–1983	1946–1976	1939–1983
R^2	0.21	0.18	0.26	0.24
Observations	1,062	1,293	503	594

one-third of the results above can be ascribed to anomalously large observations.

C.7 Other methods of cleaning orthogonal sources of risk

Another potential concern is that factor model used to adjust average excess returns for time-varying global and continental risk could be absorbing some of the treatment variation, especially for the majority Catholic autocracies in Latin America. To assure this is not driving the results, this subsection presents the results adjusting average excess returns for global risk only, estimating a one factor model of the form

$$R^e_{c,j,t} = \alpha_{c,t} + \beta_{1,t} R^{e,global}_t + \varepsilon_{c,j,t} \tag{C.2}$$

where $R^{e,global}_t$ denotes the total return in excess of the return on U.S. treasury bills on a GDP-weighted global market portfolio, c denotes the country, and t denotes the year. Once again, the β's are estimated on a rolling basis over 10-years, and require a minimum of 5-years to be estimated. This risk model also has good explanatory power for returns in the cross-section of

Table C.18: Difference-in-differences, 1959–1963 treatment window

This table shows the regression coefficients for the difference-in-differences specification in Equation (4.1) on two sample windows, one from 1946–1976 and the other from 1939–1983, and for two different samples, one for all countries and the other on autocracies only. In each regression, 1959 to 1963 are the years of treatment and are excluded. Excess returns are adjusted only for global risk using a one-factor risk model from Equation (C.2). Standard errors are clustered by country and year. Included countries must have at least 20 observations from 1946–1983. All coefficients have been multiplied by 100, and standard errors are in parentheses. The controls used are a series of "event controls" meaning indicator variables for whether there is a war, financial crisis, recession, first 5-years of a sovereign default, a head of government death, and ICB political crisis, democratization, or coup d'etat. In addition to the event controls, I also control for log GDP per capita. ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Panel A: No Fixed Effects

	All Countries		Autocracies Only	
	(1)	(2)	(3)	(4)
Majority Catholic Autocracy × Post	10.63***	10.77***	11.75**	11.47***
	(3.45)	(1.98)	(5.13)	(2.64)
Country FE	No	No	No	No
Year FE	No	No	No	No
Controls	Yes	Yes	Yes	Yes
Sample	1946–1976	1946–1983	1946–1976	1946–1983
R^2	0.04	0.03	0.06	0.04
Observations	1,069	1,309	512	608

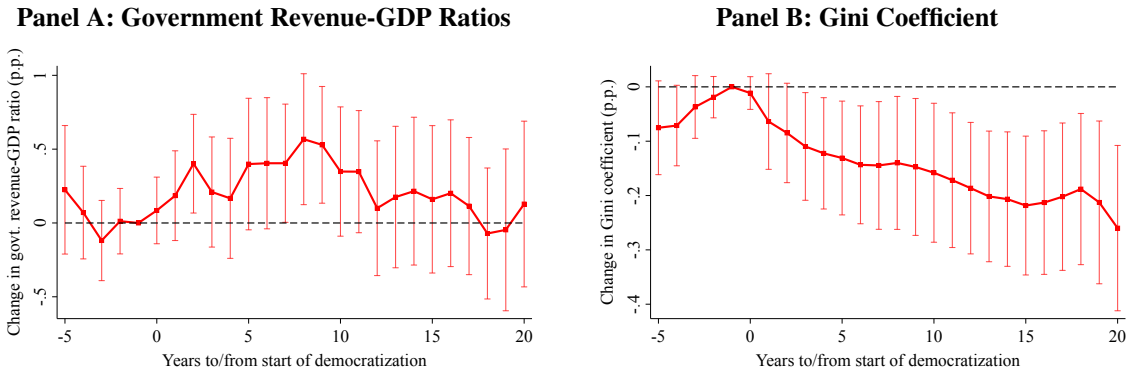
Panel B: Two-Way Fixed Effects

	All Countries		Autocracies Only	
	(1)	(2)	(3)	(4)
Majority Catholic Autocracy × Post	13.61***	12.35***	4.45	7.09**
	(3.52)	(2.03)	(5.84)	(3.35)
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes
Sample	1946–1976	1946–1983	1946–1976	1946–1983
R^2	0.14	0.11	0.19	0.16
Observations	1,069	1,309	512	608

countries, with an average (median) coefficient of determination, or R^2, of 0.39 (0.37). The results remain large and statistically significant, albeit with larger standard errors, potentially coming from measurement error in the dependent variable when using only a one factor model.

Figure D.11: Explicit redistribution event study

This figure shows an event study plot of a 5-year rolling average of the change in government revenue-GDP growth and the Gini coefficient around successful democratization ends compared to failed democratization ends. This is done by estimating additional event dummies for failed democratizations, and estimating the successful democratization coefficients relative to them. Country and year fixed effects are included and standard errors are clustered by country and year. A 90% confidence interval is reported.



D Mechanism appendix

D.1 Event study plots

This section presents an event study comparing successful democratizations to failed democratizations for a 5-year moving average of the change in government revenue-GDP ratios and the Gini coefficient. The results indicate that government revenue-GDP ratios begin increasing and inequality begins declining quickly after a successful democratization end.

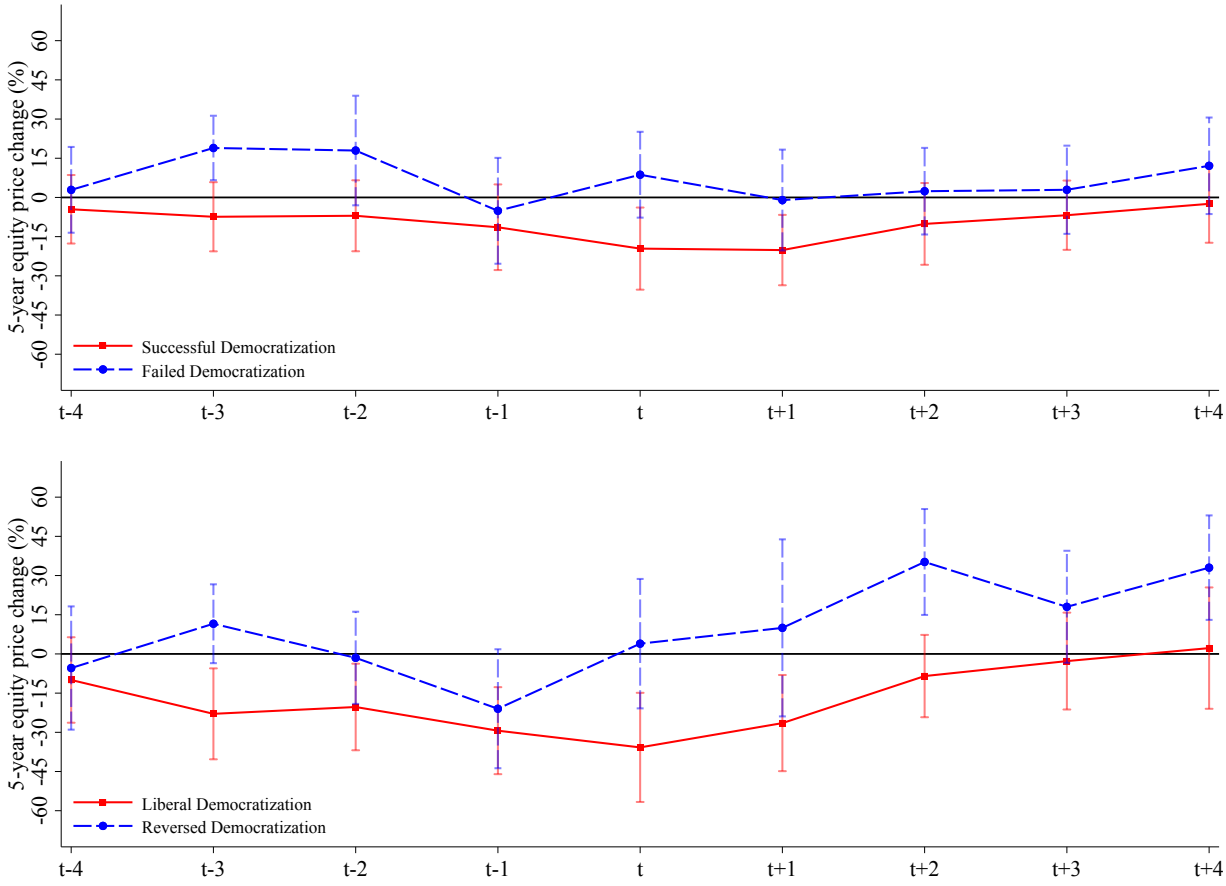
D.2 Prices at democratization ends

The results above contend that successful democratizations are a risk to investors. As such, we should see evidence in the data that investors view the realization of a successful democratization as negative in the data. Consistent with this idea, Figure D.12 shows a 5-year moving average of log capital gains around successful and failed democratization end years. Prices fall significantly around the end of successful democratizations with an F-test indicating that the coefficients are statistically different at the 5% level from what is seen in failed democratizations. To put this in perspective, investors in the market of a country undergoing a successful democratization see the price of their investment fall by 16.1% (after subtracting the intercept) over 5-years.

Further, as shown in Panel B, there is substantial heterogeneity in the effect, with countries experiencing deeper democratizations seeing prices fall by 36.1% over 5 years. These results are consistent with the Elite disaster interpretation of successful democratizations presented in the

Figure D.12: Price response to successful vs. failed democratizations

This figure presents the coefficients of the 5-year change in log prices on indicator variables for the on each year in a 9-year window around the end of "successful" and "failed" democratizations (Panel A) and "liberal" or "reversed" democratizations (Panel B). Successful and failed democratizations are determined using the designation in the ERT data. Namely, successful democratizations are ones in which there is a democratic transition or deepened democracy. Failed democratizations are ones in which there is no democratic transition. Liberal democratizations are ones in which the ending regime is a "liberal democracy" as determined by the V-Dem regime type variable. A reversed democratization is one in which the country reverts to a closed autocracy or the business or political elites become the most powerful group in the regime, also determined by the V-Dem regime indices, in the 5 years after the end of a democratization. The bars represent a 90% confidence interval of the point estimates with standard errors clustered by country and year.



model in Section 6. Moreover, democratizations that are reversed or co-opted after the democratization end see high realized capital gains, as evidenced by the reversed democratization line in Panel B.

E Model calculations and proofs

E.1 Value functions of the Citizens and the Elites

Both the Elites and the Citizens have Epstein and Zin utility over coconuts. For the Citizens, in autocracy, their only decision is over whether to revolt; in democracy their only decision is the tax rate to implement. To understand the former, we need to understand the solution to the Citizens' value function. We can solve this in three case: (1) by solving for their value function in the revolution, (2) by solving for their value function in democracy, and (3) by solving for their value function in autocracy as a function of the cost of revolution μ. For the Elites, they must decide the tax rate to set in autocracy, and make no decisions of consequence for the political environment in democracy. In all periods, they must choose their portfolio in financial markets.

Value functions in the revolution If the Citizens decide to revolt, their value function can be written as

$$V^p(R,\mu_t)^{1-1/\psi} = (1-\beta)(Y_t^R)^{1-1/\psi} + \beta\left(\mathbb{E}_t\left[V^p(R,\mu_t)^{1-\gamma}\right]\right)^{\frac{1-1/\psi}{1-\gamma}}$$

where $Y^R \equiv \left(\frac{1-\mu}{1-\delta}\right)Y$ and the expectation is taken over the next period value of Y. Because Y is independent and identically distributed and the value function is homogeneous, we can scale the value function by Y, which yields $v^p(R,\mu_t)Y_t \equiv V^p(R,\mu_t)$. The scaled value function is then equal to:

$$v^p(R,\mu_t)^{1-1/\psi} = (1-\beta)\left(\frac{1-\mu}{1-\delta}\right)^{1-1/\psi} + \beta^\star\left(v^p(R,\mu_t)^{1-\gamma}\right)^{\frac{1-1/\psi}{1-\gamma}}$$

where $\beta^\star = \beta e^{(1-1/\psi)\bar{y}+\frac{1}{2}(1-\gamma)(1-1/\psi)\sigma_y^2}$. Solving for the value function yields the solution,

$$v^p(R,\mu_t) = \left(\frac{1-\beta}{1-\beta^\star}\right)^{\frac{1}{1-1/\psi}}\left(\frac{1-\mu}{1-\delta}\right).$$

The Elites conversely are assumed to have a large negative payoff in the revolution state $-v^r(R)$ such that they would always rather concede democracy.

Value functions in democracy The value function of the Citizens in democracy can be solved for using an identical logic to the solution in the revolution. Since the Citizens set the tax rate in democracy, their income is given by $\hat{Y}^p(\tau^{p*}(\theta^D)) = \left(\frac{1-\theta^D}{1-\delta} + \frac{1}{2}\left(\frac{\theta^D-\delta}{1-\delta}\right)^2\right)Y_t$. Since the economy remains a democracy forever after a successful democratization, the value function can be written

as

$$v^p(D)^{1-1/\psi} = (1-\beta)\left(\frac{1-\theta^D}{1-\delta} + \frac{1}{2}\left(\frac{\theta^D-\delta}{1-\delta}\right)^2\right)^{1-1/\psi} + \beta^\star \left(v^p(D)^{1-\gamma}\right)^{\frac{1-1/\psi}{1-\gamma}}.$$

Solving yields

$$v^p(D) = \left(\frac{1-\beta}{1-\beta^\star}\right)^{\frac{1}{1-1/\psi}} \left(\frac{1-\theta^D}{1-\delta} + \frac{1}{2}\left(\frac{\theta^D-\delta}{1-\delta}\right)^2\right).$$

In equilibrium, the value function of the Elites in democracy can be solved for in the same way. Their income in democracy is given by $\hat{Y}^r(\tau^{p*}(\theta^D)) = \left(\frac{\theta^D}{\delta} - \frac{(\theta^D-\delta)^2}{\delta(1-\delta)} - \frac{1}{2}\left(\frac{\theta^D-\delta}{1-\delta}\right)^2\right)Y_t$. Again, since the economy remains a democracy forever after a successful democratization, the value function can be written as

$$v^r(D) = \left(\frac{1-\beta}{1-\beta^\star}\right)^{\frac{1}{1-1/\psi}} \left(\frac{\theta^D}{\delta} - \frac{(\theta^D-\delta)^2}{\delta(1-\delta)} - \frac{1}{2}\left(\frac{\theta^D-\delta}{1-\delta}\right)^2\right).$$

Value to the Citizens in autocracy In autocracy, there will be a solution to the value function for each value μ takes. This means we can write the value function of the Citizens in autocracy as

$$v^p(A,\mu_t)^{1-1/\psi} = (1-\beta)\hat{y}_t^p(\tau_t)^{1-1/\psi} + \beta^\star \left(\mathbb{E}_t\left[v^p(\mu_{t+1})^{1-\gamma}\right]\right)^{\frac{1-1/\psi}{1-\gamma}} \tag{E.1}$$

where the continuation value is given by

$$v^p(\mu_{t+1})^{1-\gamma} = \begin{cases} v^p(D)^{1-\gamma} & \text{if } \phi_{t+1} = 1 \\ v^p(A,\mu_{t+1})^{1-\gamma} & \text{if } \phi_{t+1} = 0 \\ v^p(R,\mu_{t+1})^{1-\gamma} & \text{if } \rho_{t+1} = 1 \end{cases}.$$

E.2 Solution to more general cases of the model

In the main text, the model is calibrated such that upon reaching the third state, society transitions to democracy. In general though, for higher values of μ in the third state, the outcomes will be different. This section solves for the cutoff values of μ that achieve the different equilibrium outcomes in the third state, in particular, the three thresholds, $\underline{\mu}$, μ^*, and μ^{**}. In this example, for simplicity I take the case where $\mu^1 = \mu^2 = 1$ and $\mu^3 = \mu$, and I will characterize the solution for

the threshold points in the third state. The transition matrix is given by

$$\mathbf{P} = \begin{pmatrix} p_{11} & p_{12} & p_{13} \\ p_{21} & p_{22} & p_{23} \\ p_{31} & p_{32} & p_{33} \end{pmatrix}$$

where all of the rows must sum to 1. The optimized value function (scaled by Y) of the citizens can be expressed compactly as

$$\mathbf{V}^p = \mathbf{Y} + \beta^\star \mathbf{P}\mathbf{V}^p$$

and implies the solution

$$\mathbf{V}^p = (\mathbf{I} - \beta^\star \mathbf{P})^{-1}\mathbf{Y} \tag{E.2}$$

where $\mathbf{I}$ is the identity matrix. The solutions in this case are pinned down by the cashflows in the final state and the transition probabilities.

To obtain the first threshold, $\underline{\mu}$, notice that the present value of coconuts when the Citizens receive no transfers in any period is

$$V^p(A, \mu_t; \tau_t = 0 \ \forall t) = \frac{1 - \theta^A}{(1-\delta)(1-\beta^\star)}. \tag{E.3}$$

Equating Equation (6.7) with Equation (E.3) shows that

$$\underline{\mu} = \theta^A. \tag{E.4}$$

The second threshold, μ^*, is given by

$$\mu^* = \theta^A - \frac{\varpi(\theta^A - \delta)^2}{2(1-\delta)}, \tag{E.5}$$

where

$$\varpi = \mathbf{e}_3'(\mathbf{I} - \beta^\star \mathbf{P})^{-1}\mathbf{e}_3(1 - \beta^\star)$$

where $\mathbf{e}_3$ is a column vector with a 1 in the third position and zeros elsewhere, $\mathbf{I}$ is a 3×3 identity matrix. In addition, when μ is in the range $\mu \in [\mu^*, \underline{\mu})$, the minimum tax the Elites can offer to

avoid revolution is given by

$$\hat{\tau}(\mu) = \frac{\theta^A - \delta}{1-\delta} - \frac{\sqrt{(\theta^A - \delta)^2 - 2\left(\frac{\theta^A - \mu}{\varpi}\right)(1-\delta)}}{1-\delta}. \tag{E.6}$$

The final threshold, μ^{**} is described above in Equation (6.14).

Proposition 1. *If the transition matrix for μ follows Equation (6.15) and $\mu^1 = \mu^2 = 1$ and $\mu^3 = \mu$, and the regularity conditions $\beta^\star < 1$ and $\theta > \delta$ hold, then:*

- *For $\mu \in [\underline{\mu}, 1]$, the economy is an autocracy and taxes are set to 0 in all periods;*
- *For $\mu \in [\mu^*, \underline{\mu})$, the economy is an autocracy in all periods and taxes are set to 0 in the autocracy state and the democratization state, and to $\hat{\tau}(\mu)$, as specified in Equation (E.6), in the third state;*
- *For $\mu \in [\mu^{**}, \mu^*)$, the economy is an autocracy and taxes are set to 0 in the autocracy state and the democratization state, and the economy becomes a democracy in the third state and taxes are set to τ^{p*}. Once the third state is reached, the economy remains a democracy forever;*
- *For $\mu \in [0, \mu^{**})$, the economy is an autocracy and taxes are set to 0 in the autocracy state and the democratization state, and the Citizens revolt in the third state;*

is a Markov perfect equilibrium with the threshold points $\underline{\mu}$, μ^*, and μ^{**} described by Equations (E.4), (E.5), and (6.14).

E.3 Asset pricing algebra

The solution for the pricing kernel revolves around the growth rate of the consumption of the Elites. This can be decomposed as

$$\frac{C^r_{t+1}}{C^r_t} \equiv \left(\frac{Y_{t+1}}{Y_t}\right)\left(\frac{c^r_{t+1}}{c^r_t}\right) \tag{E.7}$$

where c_{t+1} is consumption scaled by aggregate income. The growth rate of scaled consumption is given by

$$\frac{c^r_{t+1}}{c^r_t} \equiv \begin{cases} Z & \text{if } \phi_t = 1; \phi_{t-1} = 0 \\ 1 & \text{otherwise} \end{cases} \tag{E.8}$$

where $Z < 1$ represents the penalty the Elites face to their consumption upon a successful transition to democracy, given by

$$Z = \frac{\hat{y}_t^r(\tau^{p*}(\theta^D))}{\hat{y}_t^r(\tau_t)}. \tag{E.9}$$

Under Epstein-Zin utility, the stochastic discount factor of the Elites is

$$M_{t+1} = \beta^\alpha \left(\frac{C_{t+1}^r}{C_t^r}\right)^{-\frac{\alpha}{\psi}} R_{W,t+1}^{(\alpha-1)}$$

where $\alpha \equiv \frac{1-\gamma}{1-\frac{1}{\psi}}$. The return on wealth can be written as

$$R_{W,t+1} = \left(\frac{\kappa_{t+1}}{\kappa_t - 1}\right)\left(\frac{C_{t+1}^r}{C_t^r}\right) \tag{E.10}$$

where $\kappa \equiv W/C$ is the cum-dividend wealth-consumption ratio. Conjecture that κ is constant in each state of μ. This means that the solution is given by the solution to the system of equations

$$\kappa(\mu^j) = 1 + \beta e^{(1-\frac{1}{\psi})\bar{y} + \frac{1}{2}(1-\gamma)(1-\frac{1}{\psi})\sigma_y^2} \left[\mathbf{e}_j' \mathbf{P} \boldsymbol{\kappa}^\alpha\right]^{\frac{1}{\alpha}} \tag{E.11}$$

in states 1 and 2, where

$$\boldsymbol{\kappa}^\alpha \equiv \begin{pmatrix} \kappa(\mu^1)^\alpha \\ \kappa(\mu^2)^\alpha \\ \kappa(\mu^3)^\alpha Z^{1-\gamma} \end{pmatrix}. \tag{E.12}$$

In state 3, the wealth-consumption ratio is

$$\kappa(\mu^3) = \frac{1}{1 - \beta e^{(1-\frac{1}{\psi})\bar{y} + \frac{1}{2}(1-\gamma)(1-\frac{1}{\psi})\sigma_y^2}}.$$

This system of equations can be solved numerically.

The riskfree rate, similar to the wealth-consumption ratio, varies only with the state of μ and is given by

$$R_f(\mu_t) = \mathbb{E}\left[\beta^\alpha \left(\frac{C_{t+1}^r}{C_t^r}\right)^{-\gamma} \left(\frac{\kappa(\mu_{t+1})}{\kappa(\mu_t) - 1}\right)^{\alpha-1}\right]^{-1}.$$

This once again yields a system of 3 equations for the riskfree rate, which are characterized by

$$R_f(\mu^j) = \beta^{-\alpha} e^{\gamma\bar{y} - \frac{1}{2}\gamma^2\sigma_y^2} \left(\kappa(\mu^j) - 1\right)^{\alpha-1} \left[\mathbf{e}_j' \mathbf{P} \boldsymbol{\kappa}^{\alpha-1}\right]^{-1} \tag{E.13}$$

in states 1 and 2, where

$$\boldsymbol{\kappa}^{\alpha-1} \equiv \begin{pmatrix} \kappa(\mu^1)^{\alpha-1} \\ \kappa(\mu^2)^{\alpha-1} \\ \kappa(\mu^3)^{\alpha-1} Z^{-\gamma} \end{pmatrix}. \tag{E.14}$$

This riskfree rate in the 3rd state is given by

$$R_f(\mu^3) = \beta^{-1} e^{\frac{1}{\psi}\bar{y} - \frac{1}{2}(\gamma - \frac{1}{\psi}(1-\gamma))\sigma_y^2}.$$

The equity claim is modeled as a levered claim to Elite consumption as in Wachter (2013), such that $D_t = C_t^{\lambda}$. This implies the Euler equation

$$1 = \mathbb{E}_t \left[\beta^{\alpha} \left(\frac{C_{t+1}^r}{C_t^r} \right)^{\lambda - \frac{\alpha}{\psi}} R_{W,t+1}^{(\alpha-1)} \left(\frac{pd_{t+1} + 1}{pd_t} \right) \right] \tag{E.15}$$

where pd is the ex-dividend price-dividend ratio. In democracy, the price-dividend ratio is given by

$$pd(D) = \beta e^{(\lambda - \frac{1}{\psi})\bar{y} + \frac{1}{2}((\lambda-\gamma)^2 + (1-\gamma)(\gamma - \frac{1}{\psi}))\sigma_y^2} \left(pd_{t+1} + 1 \right) \tag{E.16}$$

which implies that

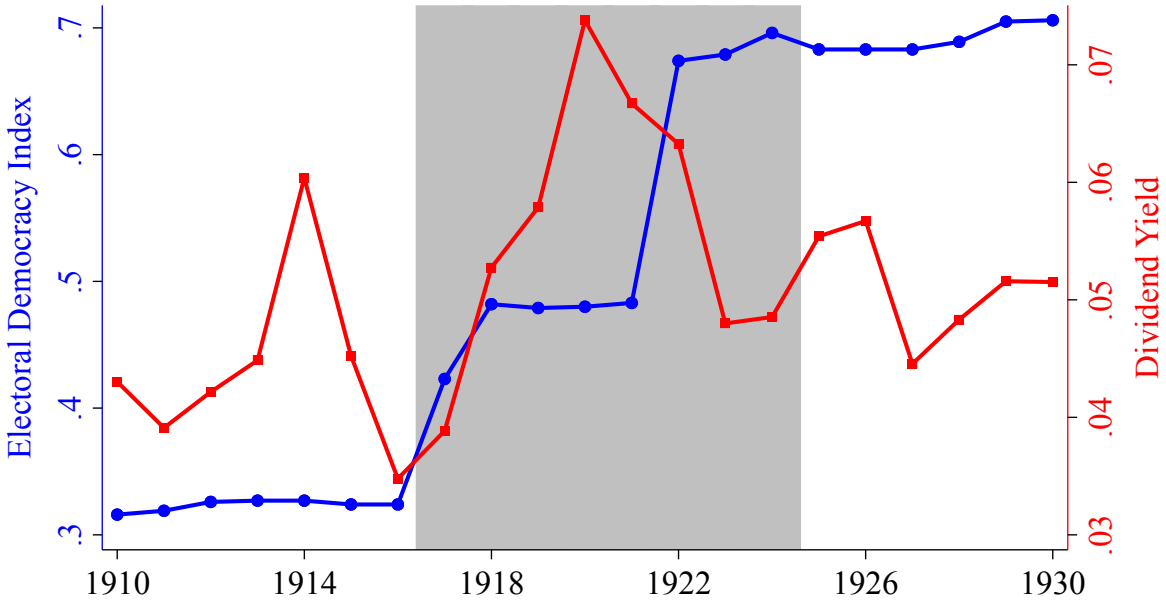
$$pd(D) = \frac{\beta e^{(\lambda - \frac{1}{\psi})\bar{y} + \frac{1}{2}((\lambda-\gamma)^2 + (1-\gamma)(\gamma - \frac{1}{\psi}))\sigma_y^2}}{1 - \beta e^{(\lambda - \frac{1}{\psi})\bar{y} + \frac{1}{2}((\lambda-\gamma)^2 + (1-\gamma)(\gamma - \frac{1}{\psi}))\sigma_y^2}}. \tag{E.17}$$

F Case studies of democratization

F.1 Sweden, 1917–1924

The fall of the monarchy in Sweden offers an excellent example of a democratizations associated with a large stock market response combined with subsequent redistribution. Relative to its Scandinavian neighbors, Sweden was slow to democratize. This changed in 1917. The year began with a conservative government in power. By autumn, however, this government had been forced from office due to "food riots and the unreliability of the army (Luebbert, 1991)." Worker and soldier unrest continued into 1918 and by October the decisive democratic breakthrough had oc-

Figure F.13: Electoral Democracy Index and dividend yield, Sweden 1917–1924



cured. This victory brought with it a coalition Liberal-Social Democrat government from 1918–1920 which instituted several pro-labor policies through strengthening the already strong trade unions and instituting the 8 hour work day (Bengtsson, 2014). Universal suffrage was also established during this time, with the first elections under universal suffrage taking place between September 10th and 26th in 1921. V-Dem's Electoral Democracy Index tracks this progress well, as shown in Figure F.13, showing an initial increase in 1918 and final increase in 1922 as the newly elected government takes power.

While these policy changes did not immediately bring forth the famed Swedish welfare state—that would come about during and after the Great Depression—they did alter the bargaining power between labor and capital tremendously. For example, Bengtsson (2014) finds a structural break in the capital share of income in 1920, with the capital share going from a high of 40% in 1916 down to 20% just after 1920. Moreover, this effect seemed to permanent; from 1920–2000, it would not reach above 30% again.

Additional support for a nearly immediate reduction in inequality comes from examining top income shares. While exact numbers on how much inequality declined after the democratization are somewhat contested, recent research by Bengtsson, Molinder and Prado (2021) on a random

sample of tax returns in Stockholm indicate that the Gini coefficient fell by at much as 20 percentage points and the top 10% share of income by 15 percentage points from 1920 to 1940. For comparison, the World Inequality Database (WID) reports that the top 10% share in the United Kingdom and United States remained flat over this period, and in France only declined by 5 percentage points. Similarly, the WID reports that the top 1% income share in Sweden fell by 8 percentage points, compared to 5 percentage points in the UK and France from 1919–1941. It remained flat in the U.S. over this period. Bengtsson (2019) also notes the discontinuity in Swedish income inequality post-democratization.

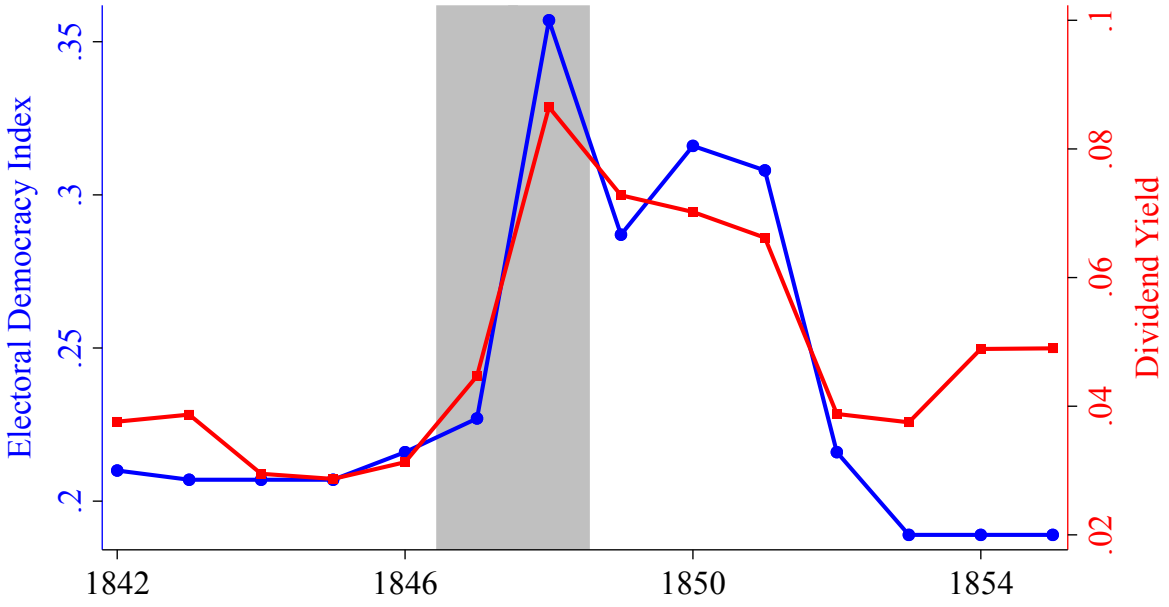
Finally, the Swedish democratization brought with it asset pricing effects consistent with the main message of the paper, as shown by Swedish dividend yield in Figure F.13. The dividend yield began to rise in 1917 with the labor unrest and calls for increased political rights. In the year of the democratic breakthrough, the dividend yield rose further with the onset of the democratic breakthrough. From 1917–1920, the outcome of the democratization remained highly uncertain. However, as 1920 came to an end, the shift of power toward the left became complete, and brought with it large declines to inequality. With this uncertainty resolved, the dividend yield began to fall to it's pre-democratization levels.

F.2 France, 1847–1848

The establishing of the Second French Republic in the wake of the revolution of 1848 presents an excellent example of a failed democratization. The movement toward the 1848 began in 1847 with the beginning of the Reformist "banquets" at which toasts were drunk to the *République française* (Marx, 1850). This *Campagne des banquets* was constructed to circumvent the restriction on political gatherings levied by the monarchy. While mostly liberal in nature, these banquets were also attended by reformists of all kinds; for example, a young Friedrich Engels attended some of these banquets starting in October 1847. King Louis Philippe allowed for these Reformist meetings to continue, resulting in an increase in free expression in the Electoral Democracy Index, as shown in Figure F.14.

As the banquets became more revolutionary in nature, however, the Prime Minister of France, François Guizot, outlawed them in January, 1848. Despite this ban, the gatherings continued. Things came to a head on February 22nd, when the French government banned the banquets for the second time, leading the organizing committee to cancel the events. Workers and students, however, had been mobilizing prior to the ban, and they did not plan to cancel their demonstration. It was with these demonstrations that a second "Three Glorious Days" began, leading to the ousting

Figure F.14: Electoral Democracy Index and dividend yield, France 1847–1848



of King Louis Philippe on February 24th.

Shortly after the abdication of King Louis Philippe, the Second French Republic was declared. However, the democratic progress was short lived. Infighting in the proto-socialist groups made them politically ineffectual and ultimately led to the election of Louis Napoleon Bonaparte in the election of 1848. Bonaparte, a man viewed as the arch-ally to the *bourgeoisie* by Marx, ultimately fully reversed the democratic progress in his famed 1851 *coup d'état*, which established the Second French Empire.

Also shown in Table F.14 is the movement in the dividend yield across the failed democratization. Dividend yields spike in 1848 with the initial unrest and fall of the monarch. They then drop after the election of Louis Napoleon, but remain elevated until 1851, and the establishment of the Second Empire. In 1851 and 1852, stock prices rose 27% and 53%, respectively, signaling the end of the episode.

G List of democratizations

Table G.19 shows the list of democratizations used in the asset pricing results.

Table G.19: List of democratizations and democratic jumps

Country	Democratizations	Major Events
Argentina	1916–1926	1916: First Presidential Election with universal male sufferage
		1921: Passage of Labor Codes
		1922: Successful transition of power to Alvear Administration
Argentina	1932–1940	1932: Removal of Jose Felix Uriburu after turn toward fascism
		1932: (Fraudulent) election after coup
		1933: Survival of attempted coups
		1937: General strike in support of construction workers
		1938: Ortiz administration attempts to curtail electoral fraud
Argentina	1946–1948	1946: Presidential election which Peron won in a landslide
		1947: Suffrage extended to women
		1948: Successful legislative election
Argentina	1972–1974	1972: Peronists begin general strikes and protests
		1972: Return of Juan Peron from exile
		1973: First elections in 10 years
		1973: Juan Peron second presidency
		1974: Death of Juan Peron
		1974: Beginning of Isabel Peron administration
Australia	1843–1844	1843: First parlimentary election
Australia	1856–1858	1856: Beginning of Responsible Government
		1856: Eight hour workday introduced
		1856: Manhood suffrage introduced
		1856: South Australian Constitution
		1858: Secret Ballot introduced
		1858: Women granted right to divorce
Australia	1901–1904	1901: Formation of the Australian federation
		1901: Commonwealth of Australia proclaimed
		1901: Australian Labor Party becomes official federal party
		1901: First federal election
		1902: Women receive right to vote
		1903: High Court of Australia established
		1903: Women vote in first election
		1904: First Labor government

(Continued on next page)

Country	Democratizations	Major Events
Australia	1918–1923	1918: Beginning of industrial unrest
		1918: End of WWI bring end to conscription of troops
		1919: Preferential voting introduced
		1921: First Woman elected to parliament
		1922: Queensland abolishes upper house
Belgium	1894–1900	1893: General strike for suffrage
		1894: First election under universal manhood sufferage
		1894: Beginning of welfare net
		1896: Beginning Liberal-Labor alliance
		1900: Election of 1900
Belgium	1919–1922	1919: End of German occupation
		1919: Beginning of Labor-Catholic Party coalition
		1919: Introduction of graduated income tax
		1919: First election with universal single-vote suffrage
		1921: General election
Belgium	1944–1950	1944: End of German occupation
		1944: Social Pact between labor party and trade unions
		1945: Return of government in exile
		1946: General election
		1949: Introduction of women's sufferage
		1950: General strike and abdication of King Leopold
Belgium	1961–1965	1961: "Strike of the Century"
		1961: Linking of Walloon nationalism with syndicalism
		1961: Decolonization of Congo
		1965: End of Congo Crisis
Bahrain	2000–2003	1999: Death of Shaikh Isa bin Salman Al Khalifa
		2000: Creation of Supreme Judicial Council
		2001: National Action Charter
		2002: New constitution
		2002: Legislative Election
		2002: Women's right to vote
Brazil	1945–1950	1945: End of the Estado Novo
		1945: Beginning of Social Democratic Party dominance
		1946: Fifth constitution of Brazil
		1947: Legislative election
		1950:: General election

(Continued on next page)

Country	Democratizations	Major Events
Canada	1867	1867: Creation of the Dominion of Canada
Canada	1920–1938	1920: Dominion Elections Act 1920: Formation of Progressive Party of Canada 1921: Election of first woman to House of Commons 1922: Full suffrage to black and white women in most provinces 1925: Extension of suffrage in Newfoundland and Labrador 1925: Election with continued Progressive Party success 1926: King-Byng affair
Canada	1942–1954	1942: A national plebiscite is held on the issue of conscription 1942: Income War Tax Act brings increased labor mobilization 1949: End of Judicial Committee of the Privy Council appeals in Canada
Switzerland	1970–1972	1971: First National Election with Women Voting
Ivory Coast	2001–2002	2001: Ivorian Popular Front (FPI) win majority
Colombia	1990–1995	1990: Colombian Constitutional Assembly election 1991: Enacting of the Constitution of Human Rights 1993: Death of Pablo Escobar 1995: Downfall of Cali Cartel
Denmark	1901–1902	1901: Introduction of parlimentary sovereignty 1901: Folketing election 1902: Landsting election
Denmark	1916–1920	1915: Women granted right to vote 1916: Beginning of the Danish welfare state 1918: First elections under women's suffrage 1920: Easter Crisis
Denmark	1945–1948	1945: End of German Occupation 1945: Folketing and Landsting elections 1945: Beginning of Social Democrat dominance 1946: October Note 1948: Faroe Island given "home rule"
Spain	1931–1934	1931: Deposition of King Alfonso XIII 1931: Beginning of Second Spanish Republic 1931: New constitution 1933: General election

(Continued on next page)

Country	Democratizations	Major Events
Spain	1976–1980	1975: Death of Francisco Franco
		1977: First parliamentary election since 1936
		1978: Approval of 1978 Constitution
		1979: First general election under new constitution
		1981: Survival of attempted coup
Finland	1917–1921	1917: Independence from Russia
		1918: End of Finnish Civil War
		1919: New Constitution enacted
		1919: Parliamentary election
		1919: Social Democrat victory
		1921: Official completion of Finnish Independence
Finland	1945–1946	1945: End of alliance with Nazi Germany
		1945: Parliamentary election
		1946: Beginning of Mauno Pekkala administration
Finland	1948–1950	1948: Parliamentary elections
		1948: End of Pekkala administration
		1949: Kemi strike; rejection of Communism
		1950: Labor unrest and threat of general strike
		1950: Start of a social reform era and welfare state
France	1847–1848	1847: Beginning of the Reform Movement and the banquets
		1848: July Monarchy Ends
		1848: Founding of Second French Republic
		1848: Election of President Louis-Napoleon Bonaparte
France	1966	1966: Founding of Democratic Centre party
		1966: Beginning of student movement toward May 68
Hong Kong	1989–1992	1989: Tienanmen Square Protests
		1989: Founding of Hong Kong Alliance in Support of Patriotic Democratic Movements of China
		1990: Beijing ratifies Hong Kong's Basic Law
		1991: Introduction of directly elected seats in legislature
		1992: Governor Chris Patten announces reform package

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Country	Democratizations	Major Events
Indonesia	1945–1957	1945: Beginning of Indonesian National Revolution
		1946: Beginning of Republican government in Jakarta
		1949: Independence
		1950: Provisional Constitution of 1950
		1951: Founding of Indonesian Communist Party
		1955: First parlimentary elections
		1957: System of Guided Democracy
Indonesia	1997–2004	1997: Indonesian legislative election
		1998: Student demonstrations begin
		1998: Collapse of Suharto regime
		1999: First democratic elections
		2000: Process of Constitutional reform
		2004: Presidential election
India	1950–1957	1950: Adoption of Constitution of India
		1950: First Republic Day
		1951: General election
		1952: Completion of General election
		1957: General election
India	1977–1979	1977: End of emergency powers
		1977: Founding of Congress for Democracy
		1977: General Elections; first loss for the Congress
		1978: Appointment of Backward Classes Commission
		1979: Fall of Janata Party
Kenya	1990–2003	1990: Increased congressional pressure for reform
		1991: Founding of Forum for the Restoration of Democracy (FORD-Kenya)
		1991: Repeal of one party amendment
		1992: General election
		1993: Successful transition to multiparty rule
		2003: FORD-Kenya election victory

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Country	Democratizations	Major Events
South Korea	1981–2000	1980: Gwangju Uprising 1981: Founding of Fifth Republic of Korea 1987: June Democracy Movement 1987: First democratic elections 1988: Founding of Sixth Republic of Korea 1988: New Constitution 1993: Reforms clamping down on corruption 1998: Inauguration of Kim Dae-jung 1998: First peaceful tranfer of power between parties
South Korea	2017–2018	2017: Park Geun-hye's removal from office 2017: President Moon Jae-in elected 2018: Park sentenced to 25 years in prison for bribery, coercion, and abuse of power
Sri Lanka	1947–1949	1947: First elected parliamentary government 1947: New republican constitution replaced the Soulbury Constitution 1948: Discriminatory legislation passed 1949: Tamil congress splits; Federal Party is formed
Sri Lanka	2015–2017	2015: Presidential elections 2015: Vote for Mahinda Rajapaksa; does not belong to established political party 2015: Agenda to reverse near autocratic actions of last decade 2016: New president lifts ban on Tamil
Malaysia	2018	2018: Election of the Pakatan Harapan 2018: End of 60 year political reign by United Malays National Organisation 2018: Malay rights groups lead anti-ICERD rally reversing Mahathir's decision to ratify ICERD 2019: Partnership between UNMO and PAS is formalized
Namibia	2013–2016	2013: Push for gender equality 2014: Election with peaceful transfer of power 2014: Surveys indicate more citizens support democracy 2015: Local and regional elections held with electronic voting 2016: SWAPO power checked by High Court

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Country	Democratizations	Major Events
Nigeria	1976–1980	1976: Commander in Chief Muhammed killed in abortive coup 1976: General Olusegun Obasanjo, takes over 1976: Minorities vote for new president, Alhaji Shehu Shagari 1978: Obasanjo lifts ban on political parties
Nigeria	2010–2016	2010: Death of President Umaru Yar'Adua 2011: Election of 2011 (most transparent since 1999) 2015: Even more transparent general election 2015: Successful transition of power to Muhammadu Buhari
Netherlands	1917–1923	1917: Universal manhood suffrage implemented 1917: Women allowed to be elected, but not vote 1918: Unsuccessful socialist revolution in November 1919: Full suffrage granted to women 1920: Netherlands joins League of Nations
Netherlands	1945–1980	1945: End of German occupation 1946: Liberal State Party becomes Freedom Party 1946: Freeminded Democratic League joins Labor Party 1948: People's Party for Freedom and Democracy formed 1966: Democrats 66 formed
Norway	1906–1910	1906: First parliamentary elections since the end of Union with Sweden 1907: Legislature allows women limited suffrage and ability to hold office 1909: Sorting passes Concessions Laws following much debate and split in Venstre
Norway	1914	1913: Universal suffrage established 1914: First elections with universal suffrage
Norway	1945–1998	1945: End of German Occupation 1945: Parliamentary election 1945: Labor wins for first time since 1915 1948: Break between Labor and Communist parties
New Zealand	1889–1897	1889: Abolition of plural votes for men of property 1890: First political party, Liberal Party, formed 1893: Universal suffrage granted 1894: Act of 1894 gave state power to repurchase land

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Country	Democratizations	Major Events
Pakistan	2002–2017	2002: Referendum and General Election
		2002: Beginning of multi-party politics after 1999 coup
		2003: National assembly
		2008: General election; end of Musharraf administration
		2008: Official end of military rule
		2013: General election
		2017: Disqualification of Prime Minister Sharif by Supreme Court
Peru	2001–2004	2001: Elections after fall of Fujimori
		2001: Numerous reforms
		2002: Regionalization Law
		2002: National Accord
		2004: Expansion of social safety net
Philippines	2010–2011	2010: Presidential election
		2010: Introduction of electronic vote counting
		2010: Aquino administration; politically stable and relatively clean
Portugal	1970–1984	1969: Transition to Caetono Regime
		1969: Legislative election
		1974: Carnation Revolution
		1975: Elections for constitutional assembly
		1975: Communist coup replaced by moderate coup
		1976: Adoption of new constitution
		1977: Beginning of European integration process
		1979: First woman prime minister Maria de Lourdes Pintasilgo
		1980: Legislative election
		1983: Legislative election; Socialist party victory
Sweden	1917–1924	1917: Fall of conservative government
		1918: Introduction of universal sufferage
		1918: First Left-Social Democrat coalition government
		1921: First election under universal suffrage
		1922: Successful transition of power
Sweden	1971–1974	1971: Abolished upper house of the Riksdag
		1974: New constitution; principles of parliamentarianism incorporated

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Country	Democratizations	Major Events
Thailand	1992–1993	1992: Black May Protests
		1992: General Elections after Coup
Thailand	1997–2001	1997: Enactment of the "People's Consitution"
		1997: Chuan Leekpai becomes prime minister
		1998: Extension of public programs
Thailand	2008–2012	2008: Elections held after 2006 military coup
		2011: General election; Pheu Thai Party wins in landslide
Tunisia	2011–2016	2011: Jasmine Revolution ousts Zine El Abidine Ben Ali
		2011: Beginning of Arab Spring
		2014: Constitution of 2014
		2014: Parliamentary elections
United States of America	1893–1903	1892: Founding of the Populist Party
		1893: Start of the Progressive Era
		1893: Beginning of the Anti-Saloon League
		1897: Organized labor gains steam with Mother Jones at helm
		1903: March on Theodore Roosevelt home by Mother Jones
United States of America	1920–1932	1920: Presidential elections; first where women vote
		1921: Washington Naval Conference
		1922: First woman senator Rebecca Felton
		1927: Reduction in Second Ku Klux Klan popularity
		1930: Start of social safety net
		1932: Election of President Roosevelt and New Deal
United States of America	1970–1977	1970: Post-civil rights era reforms
		1971: Voting age moved to 18
		1974: Watergate and resignation of Nixon
		1977: Transition to Carter administration
South Africa	1994–2010	1994: End of South African Apartheid
		1994: Election of Nelson Mandela to presidency
		1995: Enactment of new constitution
		1999: General election
		1999: Beginning of Mbeki presidency
		2004: General Election
		2005: National Party merges with ANC