Divided Government and the Stock Market*

Theofanis Papamichalis† Dean Ryu‡ Mungo Wilson§

December 2024

Abstract

We show that during United governments—when a single political party controls the White House, Senate, and House of Representatives—the U.S. stock market generates significantly higher average excess returns, and the economy experiences stronger growth compared to periods of Divided government. This government cycle is also observed at the U.S. state level and in the United Kingdom, underscoring its widespread and generalizable nature. The effects of political gridlock during divided governments are particularly pronounced for small firms, helping to explain the recent disappearance of the firm size premium. By analyzing closely contested elections, we identify causal mechanisms and show that the government cycle aligns with theoretical models linking increased political uncertainty to underperformance during Divided-Republican governments.

Keywords: Divided Government, Government Puzzle, Presidential Puzzle, Stock Returns, Economic Growth, Firm Size Effect, September Effect
JEL Classification: D72, E32, G12, G18, N12, N42

*We thank Daron Acemoglu, Ivan Alfaro (discussant), Vasco Carvalho, Robin Greenwood, Bige Kahraman, Eliana La Ferrara, Max Miller, Tom Noe, Tai-Yong Roh (discussant), Jesse Shapiro, Jim Snyder, Noam Yuchtman and seminar participants at APAD 2024, ASSA 2025, EFA 2024, FMA 2024, FMA Asia/Pacific 2024, Q group Fall seminar 2024, Harvard University, University of Cambridge, and University of Oxford for their valuable comments. Luca Nadig provided excellent research assistance.

†Faculty of Economics, University of Cambridge **Email:** `tp323@cam.ac.uk`
‡Harvard University & Saïd Business School, University of Oxford **Email:** `dryu@g.harvard.edu`
§Saïd Business School, University of Oxford **Email:** `mungo.wilson@sbs.ox.ac.uk`

1 Introduction

The *Presidential Puzzle*, named and first described in the academic literature by Santa-Clara and Valkanov (2003), is the phenomenon that U.S. stock market excess returns are on average higher during Democrat presidencies than Republican ones. Together with stock market excess returns, the literature indicates that the U.S. economy performs much better when the president is from the Democratic party (see, among others, Alesina et al. 1997; Faust and Irons 1999; Comiskey and Marsh 2012; and Blinder and Watson 2016).

In this paper, we document a related but separate phenomenon, the *Government Puzzle*. We define a U.S. government as *United* if the same party controls the White House and holds a majority in both houses of Congress: the Senate and the House of Representatives. A non-united government is *Divided*.[1] [2] The central result of this paper is that, in our sample of 94 years, we find a significant difference in stock market performance between United and Divided governments. The value-weighted excess monthly stock market return under United governments is 10.3% per annum versus 1.6% under Divided governments (8.7% per annum difference with statistical significance). We obtain more striking results for equal-weighted returns: under United (Divided) governments the average equal-weighted annual excess return over the same period is 16.8% (0.0%). These key findings from the stock market are resilient against outliers and remain valid even after

[1] In our definition, denoting D as Democrats and R as Republicans for brevity, {Incumbent President's party, Majority of the Senate, Majority of the House} $\in$ {R, R, R} or {D, D, D} are United governments, and the remaining 6 combinations ({R, D, R}; {R, R, D}; {R, D, D}; {D, D, R}; {D, R, D}; and {D, R, R}) are Divided governments. The United government is also called 'unified government' or 'government trifecta.' In a similar vein, Divided government is often called 'hung government' in a Westminster system. In this paper, we use these terms interchangably.

[2] The concept of United and Divided government is rooted in the separation of powers model in the U.S. political system. In the United States, there are three branches of government. The executive branch, which includes the White House and the president, enforces laws. The legislative branch, made up of the Senate and the House of Representatives, creates laws. The judicial branch interprets laws.

accounting for the persistence issues (Stambaugh 1999) caused by the sporadic changes in government. Related, we also show that the government cycle exists at the state level and at the international level, suggesting that it is a pervasive phenomenon.

The government cycle we identify is new, and it stands out as distinct from other related political cycles that have been studied in the finance literature. The first one is the aforementioned presidential cycle (Pastor and Veronesi 2020, henceforth PV), where Democratic presidents tend to earn higher equity premia than Republican presidents. The presidential and government cycles are closely connected since the government status depends on the political affiliation of the sitting presidents. In what follows, we show that the government layer uncovers many new empirical findings that the presidential cycle alone does not explain, thereby emphasizing the distinct influence of government status. First, we show that subpar performance during Republican presidents is specific to Divided governments. Indeed, equity returns under Unified-Republican presidents are similar to Democratic presidents from any government. In this vein, the government cycle allows us to refine the widely known presidential puzzle into a *Divided-Republican government puzzle* (see Figure 1). When we examine the interaction of political variables within the regression framework, we demonstrate that the impact of the government cycle on explaining stock market movements outweighs that of the presidential cycle, often completely subsuming it. We next show that the U.S. economy experiences recessionary periods during Divided governments, leading to a noticeable increase in the treasury premium[3] in comparison to United governments. Meanwhile, we do not find a difference in treasury premium across the presidential cycle. Specifically, our analysis reveals that Divided-

[3]The treasury premium, or excess government bond returns, is defined as long-term maturity bond less 3 month T-bill.

Republican governments coincide with the majority of NBER recessionary periods, which also happen to be the periods when September crashes occur.

Another related political cycle is the post-midterm election premium documented in Chan and Marsh (2021) (CM), where strikingly high returns are documented after each midterm election, irrespective of who runs the White House. Both midterm and presidential elections result in a change in government status, making it essential to draw a clear distinction between these two political cycles (PV and CM). Our analysis reveals that the election premium documented in CM does not account for the government cycle. Excluding the post-election months does not impact the government gap; in fact, it strengthens it. When we put it all together, we can observe that after an election resulting in divided governments, the stock market typically experiences an initial uptick (as found by CM), followed by a subsequent downturn (the main point of this paper). These two distinct patterns help to address the long-standing debate on whether 'gridlock is good or not'.[4]

We argue that political gridlock inherent (absent) under the Divided (United) governments generates the government cycle. Political gridlock has a greater impact on small firms compared to large firms, consequently leading to a more pronounced influence on the stock returns of small firms during the government cycle. We show this through the lens of size risk factor (SMB or Small Minus Big, Fama and French 1993): across the government cycle, a surprising 7% per annum difference in the SMB strategy return arises. The resurgence of SMB under United Governments is robust, evident from its outstanding performance even without accounting for the quality factor QMJ (Asness et al. 2018).

[4]On Wall Street, there is a famous saying that "gridlock is good," because a divided government with checks and balances makes it unlikely for politicians to enact drastic legislative changes (Persson et al. 1997). However, dissenters argue that a lack of control over Congress could lead to political conflicts that may have repercussions in the financial market. See a list of articles in the Online Appendix A.

The government cycle also helps to explain the recent decline of the size effect post-1980s, as during this period, the U.S. government was characterized by a prevalence of Divided rather than United governments. The well-established evidence of the size effect in financial markets naturally connects to the similar size effect observed in the macroeconomics literature (see Gertler and Gilchrist 1994; Crouzet and Mehrotra 2020). Our findings suggest a political explanation, where the greater cyclicality of small firms is driven largely by political gridlock, which disproportionately hampers their growth during economic cycles.

As we detail in the paper, real economic growth also varies significantly across government regimes. Throughout 121 years of U.S. history, the average GDP growth gap is more salient under the government cycle (4.51% for United vs. 2.01% for Divided; 2.5% government gap) than under the presidential cycle (4.49% for Democratic presidents vs. 2.54% for Republican presidents; 1.95% presidential gap).

Lastly, we attempt to infer causality of our government premium. In our sample of 47 midterm and presidential elections, we found a handful of elections where voters were almost evenly split in their decision. Based on these samples, which can be seen as a quasi-natural experiment, we observe a substantial disparity in stock returns between United governments and Divided governments. In this sense, government status affects stock market outcomes. We also rule out other possible explanations that could taint our causal interpretation.

The current paper contributes to a growing literature that describes the political cycle of asset prices. Along with two seminal papers discussing the presidential puzzle (Santa-Clara and Valkanov 2003 and Pastor and Veronesi 2020), the president's political affiliation

predicts a number of patterns such as stock market performance of politically sensitive industries (Addoum and Kumar 2016) and cash flow of firms with government exposures (Belo et al. 2013). Political relationships of key individuals as well as investors are of importance, as CEO political access to key government officials is associated with positive abnormal stock returns (Brown and Huang 2020), and senior leaderships' political affiliation affects Corporate Social Responsibility (CSR) ratings as well as the profits of the firm they manage (Di Giuli and Kostovetsky 2014). Kim et al. (2012) shows that local firms' proximity to political power, measured by Political Alignment Index (PAI), predicts stock returns. The present paper is unique in that it does not focus on the bipartisan implications, as the status of the government can come from either political party in the United States.

There is also a dense empirical and theoretical research literature on the effects of political cycles on the macroeconomy. For surveys in this area, see Alesina et al. (1997) and Harms (2001). These books offer convincing evidence that political variables have an impact on the state of the macroeconomy. The political angle has received fair attention from the economic growth literature. Hibbs (1987), Alesina and Sachs (1986), and Blinder and Watson (2016) constitute the core papers that discuss the partisan growth gap. Finally, both Poterba (1994) and Alt and Lowry (1994) show, at the state level, that unified control of state government assigns flexibility to adjust to unexpected revenue shocks. Our paper deals with unified (or divided) control of government at the federal level.

Outline: The rest of this paper is organized as follows. Section 2 establishes a government premium where there is a substantial gap in stock market performance and economic growth between United and Divided governments. Section 3 presents our novel findings

and highlights how the government cycle stands out as distinct from other related political cycles. Section 4 explores possible mechanisms that generate our results. Finally, Section 5 concludes.

2 The Government premium

2.1 Data

[INSERT Table 1 HERE]

The main sample we consider uses monthly stock returns provided by the Center for Research in Security Prices (CRSP) spanning 1927:01 - 2020:12. This entire sample period contains 1128 monthly observations during which 47 different governments were in place. Of them, 23 governments were unified (556 monthly observations) and 24 were divided (572 observations). There were 16 presidents in total, nine of them Republicans and seven Democrats. The Democratic Party (Republican Party) obtained the majority of the Senate 30 (17) times. At the same time, the House of Representatives was dominated 33 (14) times by Democrats (Republicans). A complete picture of political regimes in the U.S. is presented in Table 1. For the stock market data, we consider the logarithm of monthly returns of the value-weighted as well as equal-weighted portfolios. From these log returns we subtract the log monthly return on a three-month Treasury bill to obtain excess returns. We also consider real stock returns by subtracting the logarithm of the U.S. inflation rate on both value-weighted and equal-weighted portfolios (see Santa-Clara and

Valkanov 2003). Real U.S. GDP growth data since 1900[5] is used to examine the difference in economic growth conditional on the government cycle.

We construct two main political dummy variables: the first is a government dummy, **GOV**, defined as **GOV** $= 1$ when a unified government is in place and **GOV** $= 0$ otherwise (Divided). We follow United States House of Representatives Archives[6] in defining which months belong to the United or Divided governments. Following past literature, we also construct a president dummy **PRESID** assigning unity when a Democratic president is controlling the White House. In doing so, we assume that each month belongs to the latest scheme assuming office on that particular month. For instance, if a Congress assumes office on January 3 and the president assumes office on January 20 (which is the case for all presidents since 1950 unless in special circumstances), we then assign the month of January to the new president and to the new combination of the legislative and executive branch.[7] In our main CRSP sample, we find Democratic presidents (**PRESID** $= 1$) 50.9% of the time, while United governments were in place (**GOV** $= 1$) 49.3% of the time. This indicates our sample is well-balanced.

2.2 Stock market results

[INSERT Table 2 HERE]

[5] We thank Professor Valerie A. Ramey for sharing her real GDP data from 1900 to 2016, used in her paper Owyang et al. (2013). We extend up to 2020 using BEA economic growth whose correlation with Ramey's data during 1947 - 2016 is above 99%.

[6] See https://history.house.gov/Institution/Presidents-Coinciding/Party-Government.

[7] Assigning the latest scheme to the next month does not change our results.

The descriptive statistics in Table 2 reveal that the United regime earned statistically higher average excess returns than the Divided regime. A monthly excess stock return of 0.86% during the United regime is equivalent to an annual excess return of 10.3%. The Divided government, on the other hand, earned a meager 0.13% per month (1.6% per annum). The equity premium difference in government status is thus 8.7% with statistical significance. United government does not come with riskier stock return distributions nor higher volatility, as the percentile distribution is not materially different and the standard deviation of monthly stock returns is slightly lower. Stock returns are less negatively skewed during United governments as well. We also check whether this huge difference is driven by either extremely good (bad) returns in the United (Divided) government. In Panel B of the table, we show the descriptive statistics without the top and bottom 1% of distributions. We observe that the average monthly stock return of the Divided regime increases to 0.25% per month. While this shrinks the monthly difference from 0.73% to 0.59%, it is still a healthy 7.1% annual difference. Finally, the in-sample Sharpe Ratio across the two regimes, presented in Panel C, lends support to the big difference in government cycle.

[INSERT Table 3 HERE]

Table 3 shows that the government gap exists across various measures. The first column in Panel A, which uses value-weighted excess stock returns (VWR-TBL), reaffirms that the findings of Table 2 with a Newey-West adjusted t-statistic of 2.08.[8] The second column (VWR-INF, value-weighted stock returns less inflation) shows that the real stock return difference is also high at 6.5% per annum. Strikingly, equally-weighted excess stock re-

[8] We set Newey-West lags to 24, given that the government status lasts for 2 years. Our results are robust to setting lags to 6, 12, or 48.

turn (EWR-TBL, the third column) shows 16.78% per annum earned during United governments, while Divided governments earned zero return on average. This means, for instance, that an investor who buys Exchange-Traded Funds (ETFs) that invests equally in the entire U.S. financial market would get nothing on average during Divided governments. Comparing two political cycles (government and presidential cycle), we see that both cycles show significant differences in value-weighted stock returns (equity premium) and in equal-weighted stock returns.

In Panel B of the same table, we report post-war results from 1947. We focus on this sample for at least three reasons. First, there were two disasters in the 1920s, 1930s, and 1934s, namely the Great Depression and World War II. Such disasters are extreme tail events, and we would like to examine whether the stock market results hold without them. Another more politically related event is the 20th amendment. This constitutional event was adopted on January 23, 1933 in order to decrease the so called "lame duck" period, the period served by the president and the Congress after an election but before the end of the terms of those that were not re-elected.[9] Finally, Hibbs (1987) argues that the macroeconomic structure of the economy has changed substantially since World War II. As Panel B demonstrates, the government equity premium still shows a big difference of 6.23%

[9]Under section 1 of the amendment, it reads *"The terms of the President and Vice President shall end at noon on the 20th day of January, and the terms of Senators and Representatives at noon on the 3rd day of January, of the years in which such terms would have ended if this article had not been ratified; and the terms of their successors shall then begin."* So, since after the amendment, congressional terms start before presidential ones, it becomes clear that the new incoming Congress would hold a possible election in case that no presidential candidate gets the majority of the electoral vote. Before the amendment, new members of Congress and the new president had to wait until March 4 of the upcoming year to give them sufficient time to settle their affairs in their home states as well as to travel to Washington D.C. The problem of distance was no longer a problem by the first quarter of the 20th century. Furthermore, six months of waiting were considered a very long period. For example, examining the 72nd Congress (March 1931 - March 1933), we see that almost a quarter of its members were not re-elected due to the Great Depression. Nevertheless, both the newly elected members of Congress and President Roosevelt faced an extensive delay before they could finally commence their governance duties. See https://constitution.congress.gov/browse/amendment-20/ for more details.

(Newey-West adjusted t-statistic: 1.82), this time amounting to the presidential gap of 6.63% (Newey-West adjusted t-statistic: 1.93). The real stock return difference remains at about 5% with slightly weaker significance. We also document persistent and strong gaps in equally-weighted portfolio returns. In equally-weighted excess returns the difference is 14.84%, equally-weighted real stock returns 13.62%. The presidential premium is less than 10% during this post-war period. Taken together, the government gap is comparable to the widely documented presidential gap in the value-weighted stock return results, and shows a stronger gap in equal-weighted returns. We later demonstrate in Section 3.2 that the slightly weaker post-war outcomes in the value-weighted excess returns are primarily caused by the election premium (CM). By eliminating these small samples of months, the magnitude of the government gap in stock returns becomes more evident.

2.3 Robustness tests

While our paper deals with 94 years of stock returns data, the change of government happens 46 times or less during this time frame. Due to this infrequent nature of government transitions, our analysis may suffer from statistical issues such as spurious correlations or persistence issue addressed in Stambaugh (1999).

To tackle this issue, we provide five additional results. First, we find that the main implication remains robust when we extend the stock return results back to 1871 (pre-CRSP era). As Table B.2 in Online Appendix B suggests, the government cycle emerges as a robust fact across 150 years of U.S. history, and becomes stronger when we remove post-election months (Panel C; see Section 3.2 for more discussions). What is fascinating about this exercise is that we can observe a contrasting pattern in the presidential cycle as Republican

presidents consistently outperformed their Democratic counterparts during the pre-CRSP subsample. Despite having less statistical significance, the government cycle continues to hold.

Second, Figure A.2 illustrates that the dominance of a political party in either the Senate or the House alone does not explain the variation in excess stock returns. This placebo test reinforces our argument that it is the government trifecta (or the lack of it) that makes a difference.

Third, we address the persistence issue using a randomization-bootstrap procedure following Santa-Clara and Valkanov (2003) and Cheng (2022). The analysis is done in the following way. (1) First, we produce 10,000 time series of $\mathbf{r}^e_{t+1}$ where each time-series is drawn randomly from the 94 years of monthly stock returns ($T = 1128$) with replacement. $\mathbf{r}^e_{t+1}$ is the value-weighted excess stock returns (VWR_TBL) or equal-weighted excess stock returns (EWR_TBL). (2) Next, we independently and randomly select the government dummy $\mathbf{GOV}_t$, ensuring that the government structure remains consistent for two years. In other words, regardless of the randomly chosen government status, it will last for a duration of 24 months. We then do a coin toss to determine the next government, which also would last for 24 months.[10] (3) For each of $j = 1, 2, \ldots, 10000$ simulation, we run a predictive regression $\{\mathbf{r}^e_{t+1} = \alpha + \beta \mathbf{GOV}_t + \varepsilon_{t+1}\}_j$ and obtain t_j, t-statistics for $\widehat{\beta}$ using standard errors adjusted for heteroskedasticity. (4) Letting t_0 the t-statistics obtained using the original U.S. sample of 94 years (we find that $t_0 = 2.42$ when r^e_{t+1} is VWR_TBL, and $t_0 = 3.29$ when r^e_{t+1} is EWR_TBL), compute the bootstrapped p-value for the coefficient $\widehat{\beta}$ as sum of the number of t_js that are greater than or equal to t_0 and the number of t_js that are less

[10]Given that our sample includes 47 governments, resulting in 46 changes of government, the probability of the government maintaining a unified (or divided) status throughout the entire sample is an unlikely 1.4e-12%.

than or equal to t_0, divided by the number of simulation. As a result, the bootstrapped p-values that we obtain are 0.016 when the dependent variable r^e_{t+1} is VWR_TBL (0.001 when EWR_TBL), corroborating the significance of the government cycle we establish in the previous section.

[INSERT Table 4 HERE]

Fourth, we increase the power of our test by examining whether countries outside the U.S. demonstrate a similar governmental cycle. For this purpose, we use stock market data from the United Kingdom[11]. In the United Kingdom, a 'hung' parliament takes place when no single party holds a majority of seats (usually 326 out of 650 seats) in the House of Commons. We make use of this fact to define a government as Unified (Divided) when a single party holds (does not hold) a majority of seats. As Table 4 suggests, we observe that a large government gap (14% per annum) exists in the UK as well.

Finally, we present evidence that the government cycle also exists at the U.S. state level. To show this, we run the following monthly panel regression with state- and time-fixed effects:

$$\mathbf{r}^e_{i,s,t+1} = \alpha + \beta\ \textbf{State-GOV}_{s,t} + \gamma\ \textbf{State-PRESID}_{s,t} + \delta\ \textbf{State-EPU}_{s,t} + \theta_s + \eta_t + \varepsilon_{s,t+1} \quad (1)$$

where $\mathbf{r}^e_{i,s,t}$ is the excess return on firm i headquartered in state s at month t; **State-GOV**$_{s,t}$ is the state level government dummy that equals 1 when one party controls all of the governor, state Senate, and state House (i.e., the state government is united) and 0 otherwise;

[11]The data is obtained from Global Financial Database, where we use FTSE All-Share Index as the main stock market measure. Similar to our main empirical work, we subtract 3-month UK Treasury bills to construct excess stock returns.

State-PRESID$_{s,t}$ is the state level president (i.e., governor) dummy that equals 1 when the incumbent governor is from the Democratic party (0 when the governor is from the Republican party); **State-EPU**$_{s,t}$ is the state level Economic Policy Uncertainty measure of Elkamhi et al. (Forthcoming) as a control variable; θ_s and η_t are state- and time-fixed effects, respectively. The data we use for this analysis is from 1992 to 2020.

[INSERT Table 5 HERE]

Table 5 reports the panel regression results, and show that the government cycle also exists at the state-level. In column (1) of the table, we run the panel regression with all available samples (a total of 16,351 firms with 1,621,260 firm-month observations) and observe that the state-level government dummy (**State-GOV**) positively predicts the one-month ahead excess stock returns. In column (2) to (4) of the same table, we make our results more reliable by re-running the panel regression using sub-samples.[12] Each of the regression in column (2) to (4) pulls out the entire sample in each state and reaffirms that the government cycle result is not dependent on a single state. For example, column (2) shows that the panel regression that excludes all firms headquartered in New York (firm-month observations headquartered in NY take up 12.5% of the total sample) still exhibits the government cycle of stock returns. Finally, in column (5), we exclude firm-month samples when stocks are part of S&P 500 because they attract national or global attention from investors, rather than the state level focus relevant to this analysis. The result is very similar to previous findings. The state level governor dummy (**State-PRESID**), on the other

[12]The data used in this panel regression is an unbalanced panel where firms are disproportionately headquartered in some states. Indeed, listed firms in three major states, New York (NY), Texas (TX), and California (CA), account for 38% of all firms and hold a significantly higher share of market capitalization. If the government cycle does exist at the state level, then the main specification laid out in column (1) should not be influenced by an omission of a single state.

hand, is only weakly significant in the full-sample panel regression in column (1), and sometimes not significant.

2.4 Economic growth

The partisan theory argues that, in capitalist democracies, Republicans (or right-wing parties) are more concerned about inflation while Democrats (or left-wing parties) opt for low unemployment at the cost of inflation (Hibbs 1977). The Phillips curve argument of Nordhaus (1975) combined with the empirical regularity of Okun's law suggests a simple intuition on how Democratic presidents earn higher economic growth, which is supported in the U.S. data (Blinder and Watson 2016).

Economic growth depends also on the government cycle, and is in fact stronger than the presidential growth gap. The government story is markedly different from earlier work. The decision to prioritize unemployment or inflation is not determined by the government's status, as both Republican and Democratic presidents can face United or Divided governments. Indeed, our estimates suggest that the inflation difference between United versus Divided governments is virtually none (about 0.05% across 121 years), while Democratic presidencies experienced 1.2% higher inflation compared to Republican presidencies during the same period. Rather, it appears that the political conflict or sabotage that comes from the absence of unified control over the government. A simple analog can be found in the division of labor between the policymakers and the professional staff à la Romer and Romer (2008). Just as monetary policy is influenced both by the FOMC and the supporting members (i.e. staff who prepare a comprehensive forecast

ahead of each FOMC gathering), it is possible that leaders should not bear the sole responsibility for growth, as the supporting entities (Congress) must also collaborate to foster favorable economic outcomes.

[INSERT Table 6 HERE]

Table 6 categorizes real economic growth into presidential and government cycles, and shows that the government gap (2.5%) is higher than the presidential gap (2.0%) across 121 years. The economic growth advantage is salient during Democratic-United governments. The low t-statistics during Republican-United governments come mainly from the 1930s where the economy is commonly described as extremely volatile: for instance, the standard deviation of the quarterly growth rate is 12.4% pre-World War II. We see that, despite the high pre-WWII volatility, the difference of real growth rates between unified and Divided governments remains economically and statistically significant.

To partially alleviate concerns that economic growth is endogenous with respect to political variables, we conducted the same analysis without including NBER recession periods (this result is undocumented but available upon request). We observe that NBER recession months are concentrated during Republican presidencies,[13] so that pulling these months out shrinks the presidential growth gap to 0.9%. On the other hand, NBER recessions were fairly shared between United and Divided governments, and we see that removing these months widens the government growth gap to 3.6%. Hence, the government gap in economic growth is salient regardless of the business cycles. In sum, the

[13]Throughout the CRSP sample 1927 - 2020, Republican presidents are over-represented in NBER recessions (4 years for Democratic presidents vs. 14 years for Republican presidents). See also Figure 4 and related discussion.

results presented in this section confirm that Divided government is associated with lower economic growth, and the magnitude of the government effect is stronger than the president effect on growth (Jones and Olken 2005).

3 Discussion

Having established the gap, we now extend the main analysis in several directions. Our initial inquiry aims to assess how much our proposed government layer enhances the existing presidential layer of PV, and to verify if the post-election premium of CM aligns with the government premium. We also investigate the cross-sectional differences across the government cycle, and establish stylized facts on how the government changes over time. Finally, we provide a causal argument underpinning this phenomenon.

3.1 Is it the President, the Government, or both?

Two political dummies we defined earlier (**GOV** and **PRESID**) coincide 72% during 1927-2020, with much higher rate of coincidence in the first half.[14] Since the government's status is inherently linked to the political affiliation of the presidents, it is crucial to carefully distinguish between the two. In particular, is the government premium simply a repackage of the presidential premium? We present multiple pieces of evidence that this is not the case.

[14]Splitting the CRSP sample into two equal parts, we find that Democratic presidents and United governments coincide 83% (61%) of the time during the first (second) half of the sample. The high correlation in the first half is due to two Democratic presidents, Franklin D. Roosevelt and Harry S. Truman. During this time, the government was mostly unified.

[INSERT Figure 1 HERE]

Figure 1 nails down one of the central findings of this paper. Here, we plot the equity premium after controlling for both the party of incumbent presidents and the government status. Each bar represents mean excess stock returns, with blue (red) bars representing presidents from the Democratic (Republican) party. The first two bars represent a United government, while the following two bars represent a Divided government. The black bar labeled "Total" on the right represents the equity premium in the relevant samples.

In both the full CRSP (upper panel) and the post-war sample (lower panel), Republican presidents earned a significant equity premium when he was able to control Congress: he earned a strong 8% stock market average excess return and outperformed average stock market performance.[15] When focusing on the post-war periods, Republican presidents, supported by unified government bodies, were able to achieve superior stock market returns compared to Democratic presidents of any government status. This is surprising as, contrary to what's known in the economics and finance literature, the presidential gap in the stock market is not about Republican presidents doing badly: it is the Republican presidents *facing Divided government* that display dismal stock market performance. We also present evidence of a robust treasury premium throughout the government cycle in Online Appendix C. On the other hand, casting the same exercise conditional on the presidential cycle produces null results, consistent with Pastor and Veronesi (2020)'s Table A11 - A16 in their Online Appendix.

[15] While United-Republican stock market performance slightly falls short of Democratic presidents in the full sample, we separately plot the similar figures using stock returns adjusted for inflation, available in the Online Appendix. Here, United-Republican presidents beat Democratic presidents with either government in both samples.

3.2 The Divided discount

In related work, Chan and Marsh (2021) (CM) document election cycles where post-midterm election months exhibit higher asset prices due to lower future discount rates as the embedded political risk decreases. There is a natural link between this paper and ours, as we deal with government status that results from the midterm election.

[INSERT Table 7 HERE]

To ensure that our government premium result is not the same as the election premium, we repeat the Table 3 exercise without post-election months.[16] Table 7 shows that the government premium strengthens and now completely dominates the presidential premium. Comparing with Table 3, the government premium in value-weighted excess stock returns (Panel A, column (1) VWR-TBL) surges from 8.70% to 11.64%. We observe a similar upswing from 6.23% to 10.74% in the post-war sample, and other stock return measures also support these results.

[INSERT Figure 2 HERE]

The critical point to note is that the increased government gap found in the previous table is mainly due to the post-election premium when the resulting government is Divided. As the right picture in Panel A of Figure 2 illustrates, during 1927 - 2020, the 1.6% per annum equity premia during Divided governments (labelled 'C') can be decomposed into

[16] We drop both the post-midterm election months (December of the midterm election year up to April of the subsequent year) and the post-presidential election months (December of the presidential election year up to April of the subsequent year) as government status meets a possible change every two years. This also levels the playing field in comparing the government premium with the presidential premium as post-presidential election is an amalgam of both the change of presidents and government status.

relatively small number of post-election months when stock returns are high due to resolution of uncertainty (labelled 'A' or "Post-Election (PE)"), and other times (labelled 'B' or "Non-PE") when stock market performance is negative.

This decomposition points to two important findings. First, a post-election premium exists, and is stronger when the resulting government is divided. Competitive elections that lead to Divided governments create higher uncertainty and risk aversion until the run-up to the election, so that the post-election premium for Divided governments tends to be high: this is exactly what we see when comparing 'A' of each upper panel. The use of the 1961 - 2020 sample in the lower panel where political polarization is known to have risen dramatically (Baker et al. 2014) further reinforces this argument. When the resulting government is a United one, the post-election premium is not so high (left picture in Panel B). Second, when we analyze the months following an election (comparing 'B'), we observe a significant disparity in the status of the government. United governments are linked to substantial positive returns, while Divided governments are associated with negative returns. To provide context for these outcomes, the results of Table 3 draw comparisons from 'C' in each figure, while the results in Table 7 emerge upon comparing 'B' in each figure. The key observation is that the increased level of political polarization in the recent era leads to significantly higher asset prices in the small number of months following the election when the resulting government is Divided. This post-election premium boosts the average stock market performance during periods of Divided governments, obscuring the performance disparity between Unified and Divided governments in subsequent years. The absence of those periods, thus, results in extremely poor stock market performance under Divided regimes.

3.3 Do political variables simply proxy macroeconomic effects?

Variations in stock returns are associated with business cycles, and business activities are related to political variables. Given this interconnected relationship, it is essential to determine whether the political variables of interest align with established financial and macroeconomic fluctuations. The critical assumption is that if political variables simply act as proxies for business cycles, they should not provide additional explanatory power for aggregate stock returns after controlling for financial variables known to predict both business cycles and market returns, such as the dividend-price ratio.

To test this idea, we run the following regression:

$$\begin{aligned} r^e_{t+1} &= \alpha + \beta' \mathbf{X}^{\text{political}}_t + \gamma' \mathbf{X}^{\text{macro}}_t + \varepsilon_t \\ &= \alpha + \underbrace{\beta_1 \mathbf{GOV}_t + \beta_2 \mathbf{PRESID}_t + \beta_3 \mathbf{ELECTION}^{mid}_t + \beta_4 \mathbf{ELECTION}^{pres}_t}_{\mathbf{X}^{\text{political}}_t} \\ &\quad + \gamma' \mathbf{X}^{\text{macro}}_t + \varepsilon_t \end{aligned} \tag{2}$$

where r^e_{t+1} is the monthly excess stock returns (either excess value-weighted stock returns or excess equally-weighted stock returns), **GOV** is the government dummy that equals one (zero) when the government is unified (divided), **PRESID** is the presidential dummy that equals one (zero) when the incumbent president is from the Democratic party (Republican party), **ELECTION** is the post-midterm or post-presidential election dummies. We control for a battery of macroeconomic variables[17] but only show the regression results

[17]Following earlier literature, we make use of many available macroeconomic factors: log of dividend-price ratio (dp), default yield (dfy), term spread (ts), long-term yield (lty), relative interest rate (rrel), aggregate book-to-market ratio (bm), equity issuing and repurchasing relative to the price level (ntis), inflation (infl), and stock market variance (svar). While including all available information reduces concerns

for political variables because of space limitations.

[INSERT Table 8 HERE]

Table 8 presents the results. We first observe that each of **GOV**, **PRESID**, and **ELECTION**^{mid} individually explain aggregate stock market returns (columns (1), (2), and (3), respectively). Next, we examine the interplay of political variables in columns (4) through (7) and uncover two findings. Adding the post-midterm (and post-presidential) election months to either the presidential dummy or government dummy does not alter the impact of these two variables. This is expected as post-election months take up small percentages of the entire samples. Secondly, and most importantly, we find that the presidential dummy variable loses its explanatory power in explaining aggregate stock markets once we control for the status of government. In panel A, the coefficient for **PRESID** displays a striking 40% reduction, dropping from 0.898 in column (2) to 0.543 in column (6) when the government dummy **GOV** is added. It also loses its statistical significance in explaining the value-weighted stock returns. Furthermore, when we examine equal-weighted stock returns in Panel B, the presidential dummy experiences a comparable loss in explanatory power (though it still retains statistical significance at the 10% level).

Overall, we conclude that the status of the government has significant explanatory power for the overall behavior of the stock market. The president's political affiliation, on the other hand, loses its significance once the government dummy is included.

related to omitted variables, our results remain unchanged when we use partial lists of these macroeconomic variables.

3.4 United to Divided, Divided to United

What makes a change of government status, i.e., from united to divided and the other way around? We conclude this section by establishing a series of stylized facts that emerges when we reexaminine Table 1.

Stylized fact 1 (United to Divided). It's not easy to retain the control of Congress.

During almost every presidential term, the party in control of the White House typically experiences a decline in congressional seats during the midterm election. It seems that voters gain a deeper understanding of the president's competence, personality, and policies in the two years following the presidential election.[18] This is especially true in the post-1960s where the level of political polarization increased significantly. Prior to this period, both Republicans and Democrats were able to control Congress for quite a time. For instance, Democrats in the 1960s (both John F. Kennedy and Lyndon B. Johnson) were able to control Congress until the end of the presidency, and Republicans also survived midterm elections quite a few times.

All in all, voters' expectations turn into disappointment, leading to cold showers. The sitting presidents tend to lose grip, never to regain complete control of Congress.

Stylized fact 2 (Divided to United). You (re-)gain control of Congress only through presidential elections.

Throughout the 20th and 21st U.S. election history in our sample, government status changed from Divided to United only through presidential elections. We also observe a bipartisan

[18]See, for instance, Knight (2017) for a simple model that jointly describes midterm penalty, decreased voter turnout during midterm elections, and mean reversion to the voter partisanship.

difference on this matter. When Democrats won presidential elections, they always did so with control of Congress. Half of Republican presidents, on the other hand, won the presidential election but not control of Congress. Consistent with the first stylized fact, presidents who started their term without control of Congress never gained full control until their presidency ended.

Stylized fact 3 (*Exceptions*). *Exceptions come from unexpected circumstances.*

We note two exceptions to the above rules. First, George W. Bush at the end of 2002 was able to regain control of Congress. As a matter of fact, George W. Bush started his first term with the support of Congress, but lost control in June 2001 as Vermont Republican senator James Jeffords unexpectedly left the Republican party (Jayachandran 2006). Also, the 9/11 attack in 2001 resulted in a 'rally around the flag' effect that had led to strong support toward the incumbent political party. Democratic president Harry S. Truman is another exception. He was able to revert to united status from his second to third term, but this was his de-facto first presidential election: Truman took over the presidency after the unanticipated death of the former president Roosevelt (Jones and Olken 2005). Hence, Truman's case aligns more closely with the second stylized fact.

3.5 Causality

To examine the causal mechanism, we focus on elections decided by a narrow margin to generate quasi-natural experimental estimates of the impact of a randomized change in the government status.

[INSERT Table 9 HERE]

We start by defining a 'close-tie' political election. After a close election, the government's status can be seen as randomly assigned due to the fact that the voters were almost evenly divided in their choice. The split nature of this situation serves as a platform to assess how the shift in government status will influence investors' expectations once voting results are revealed. To determine which events fall into such category, we analyze the results of each election[19] and define close elections as those with vote margins less than 3%. Out of 47 elections in our main sample, we found nine that fit into this category, as shown in Table 9. Each column represents the difference in electoral votes or Congress/House seats in percentage terms. For instance, the midterm election in November 1930 resulted in a difference of one Senate seat (48 seats for Republicans and 47 seats for Democrats, a difference of 1.04% out of the 96 seats) and two House seats (218 seats for Republicans and 216 seats for Democrats, 0.46% of the 435 seats). The resulting government was a barely divided one. The November 2006 midterm election resulted in a 49-49 Senate tie.[20]

[INSERT Table 10 HERE]

As in Lee et al. (2004), our key identifying assumption is that governments that narrowly won the past election and are unified can be compared to governments that narrowly won the past election but are divided to establish causality. We categorize governments that arise from closely contested elections as either *'barely unified'* or *'barely divided'* for our analysis and examine the gap in stock returns between these randomly assigned governments. Table 10 summarizes the main findings. We observe that governments that are barely uni-

[19] We choose to analyze every possible election in our sample, as a change in government status can arise from any one of the presidential, Senate, or House of Representatives elections. See Eggers et al. (2015) for a comprehensive work on this issue.

[20] The majority of seats went to Democrats as two independents caucused with the Democrats. Since we are interested in differences in votes, we also consider this election event as part of our sample.

fied show high stock market performance, whereas barely divided ones show low performance. The resulting gap is huge and statistically significant in both value-weighted and equally-weighted stock market returns, suggesting that the government cycle *affects* stock returns. Since the bandwidths used for the estimations are data-driven (Imbens and Kalyanaraman 2012), and since our close-tie election samples are rather small, we further check and confirm by widening the vote margin to 5%. The result, shown in Panel B of the same table, provides the same quantitative results. We additionally check and confirm that removing post-election months does not change the results. Finally, using the same close-tie election samples, we conduct a similar exercise (unreported) to measure the stock market gap of "barely Democrat" and "barely Republican" and find results that are at best weakly positive.[21]

We conclude this section by addressing two plausible challenges to our causal interpretations. The first is the reverse-causality argument that stock markets affect the change of government. We believe it is unlikely that stock market performance is the dominant determinant of voting decisions and hence the change in government.[22] Also, this concern is not supported by the data. Suppose, contrary to our argument, that divided government is the result of low asset prices. The stock market should experience a significant decrease prior to the midterm or presidential election, as this would allow investors to witness the

[21] It may not make sense to classify all the samples under consideration as either "barely Democratic" or "barely Republican". For example, the 3% Senate tie in November 2002, which led to a unified government in 2003-2004, would be treated as barely Republican in such analysis. However, the resulting government still had a Republican president as the incumbent president rules the country for another two years. In that sense, we view this exercise as a placebo test (rather than the causal argument) to confirm that the influence of close-tie election results on the status of government is not spurious.

[22] In a recent article by Pew Research (https://www.pewresearch.org/short-reads/2022/11/03/key-facts-about-u-s-voter-priorities-ahead-of-the-2022-midterm-elections/), voters answered that while economic concerns remain the top issue, other issues such as education, healthcare, and crime concerns are also very important. In other words, voters are multi-dimensional in their decision regarding election, and stock markets would play only a limited role.

abysmal performance of the stock market during election years and encourage them to vote in favor of divided governments. We test this hypothesis by calculating average returns on election year (from January up to October) and examine whether mean yearly returns that result in divided government is lower than the mean yearly returns where voters choose united government. We do not find results that support this claim (results are unreported). Second, given that we consider an entire set of firms traded on the major U.S. stock markets, selection issue on specific types of stocks does not apply.

4 Mechanisms

We now turn to the mechanism behind our government cycle results, focusing on the political gridlock or sabotage that tends to occur during periods of divided government. Our argument explores whether, and how, this gridlock translates into negative outcomes in financial markets.

4.1 Political gridlock channel

When political parties with divergent ideologies assume control of separate branches of government, it frequently results in a legislative stalemate, hindering the effective resolution of urgent matters (see, among others, Coleman 1999). Partisan conflict and disagreements hinder quick and effective responses to negative shocks, worsening the situation (Alt and Lowry 1994). Moreover, a filibuster is more likely to occur when the government

is Divided,[23] and this period also coincides with fewer significant pieces of legislation being passed (Edwards III et al. 1997, Ansolabehere et al. 2018). Congress and the president tend to veto each other's policies more often, as we show in Online Appendix E using bills proposed from 1947 to early 2020.

To put this into perspective, in 2011, President Obama and Democratic lawmakers made efforts to advance a budget proposal, but negotiations with Republicans in the House of Representatives ultimately faltered. As a result of this political gridlock, Congress passed a series of short-term funding measures known as continuing resolutions to keep the government funded temporarily, rather than passing a full budget. These stopgap measures led to uncertainty and disruptions in government operations and programs. In another example, negotiations between President Obama and Republican congressional leaders over raising the debt ceiling became highly contentious, with Republicans demanding significant spending cuts in exchange for their support. The standoff led to a prolonged and acrimonious debate, with fears of a potential default looming over the economy. Eventually, a last-minute agreement was reached to raise the debt ceiling, but not without significant political uncertainty. On the opposite end, the Economic Growth and Tax Relief Reconciliation Act of 2001 and the Jobs and Growth Tax Relief Reconciliation Act of 2003 (commonly known as the "Bush tax cuts") were smoothly approved with the backing of Congress members from the same party.

Indeed, Divided governments, also known as gridlock periods, are associated with mounting political tensions, heightened economic policy uncertainty, increased stock market

[23] See https://www.senate.gov/legislative/cloture/clotureCounts.htm for details. Cloture has become increasingly common starting in 92nd Congress (starting in 1971), and we observe that Divided government face more frequent cloture motions during 1971 - 2020.

volatility, and a rise in the treasury premium.[24]

[INSERT Figure 3 HERE]

Figure 3 presents two figures that showcase how political gridlock is severe during Divided regimes. The above plots the yearly Partisan Conflict Index (PCI) of Azzimonti (2018) that uses a semantic search method to measure the frequency of newspaper articles recording lawmakers' disagreement about policy, and shows that political conflict is indeed higher during Divided governments (shaded areas). A notable exception is during Trump's era, where his first term (the government was unified at that time) scored the highest value of PCI. This seems to come from the U.S. - China trade dispute in 2018. Regardless, the average PCI remains statistically lower during United government: 86.8 (Divided) vs. 60.8 (United government) with a t-statistic of 4.5.[25]

Here, we use all congressional bills proposed from 80th Congress to 114th Congress from Congressional Bills Project Database (Adler and Wilkerson 2014). The database, at the time of writing, enumerates all congressional bills proposed from 1947 to May 2020. We are interested in how many proposed bills are eventually vetoed by the sitting president, as this indicates a form of political conflict. We don't consider bills that aim to help specific

[24]The government spending channel is another potential avenue to explain the government gap in stock returns and economic growth. Higher government deficits, whether caused by Unified-Republicans' tax cuts or Unified-Democrats' spending increases, can reduce private investment by competing for funds in financial markets (Cohen et al. 2011). This can lead to lower investment levels by businesses, which can ultimately impact economic growth and corporate profitability, potentially affecting stock returns and economic growth.

[25]The elevated measure after 2010 seems to reflect more polarized nature of U.S. politics. Excluding post-2010 yearly index does not change the significance of PCI gap across governments. Repeating the same exercise conditional on the party of the sitting president does not show significant difference in PCI index: 74 (Republican) vs. 70 (Democratic president) with a t-statistic of 0.74.

individuals because they're not related to the current economic situation.[26] Figure A.5 shows that Divided governments tend to meet higher ratio of vetoes. The large number of bills introduced in Congress means that even a small percentage difference makes a significant impact. In fact, a 0.04% (0.127% - 0.083%) difference translates to 2.5 more bills being vetoed during divided governments compared to united governments.

[INSERT Table 11 HERE]

Economic policy uncertainty (EPU index, Baker et al. 2016) is influenced in a negative way by the status of United governments. In Table 11, we observe that the change of government status from Divided to United predicts, at one month horizon, negative 8% change in EPU index ($100 \times (\exp\{-0.084\} - 1) = -8.06$, equation (6)), even after controlling for the presidents' political party as well as macroeconomic indicators. Similarly, United government negatively predicts stock market volatility as measured by French et al. (1987). Given the extant literature that political uncertainty has a negative impact on the economy via depressing investment (Azzimonti 2018 and Jens 2017), the analysis in this section gives us assurance that periods of Divided government are detrimental to the financial market and the economy. The presidential cycle, on the other hand, shows the opposite pattern in that both the EPU index and stock volatility tends to be positive when the Democratic president is occupying the White House.

[INSERT Figure 4 HERE]

Times when Republican presidents operate under a Divided Congress deserve special

[26] Quite a few bills have the title "For the relief of PERSON A". We remove those observations.

attention. To start with, we find that 70% of post-war NBER recession periods occured under Republican presidents who failed to control the Congress. This is illustrated in Figure 4.[27] To the best of our knowledge, this paper is the first to identify that most of the macroeconomic downturns happened during certain political regimes.

[INSERT Figure 5 HERE]

Moving further, we observe that the "September effect"[28] [29] (Kamstra et al. 2003) is concentrated exclusively in the Divided-Republican regimes, which partially explains the low stock market performance during this period. As the upper panel in Figure 5 shows, September predicts the lowest stock market performance throughout U.S. history. What we show in the below panel is that this dismally low performance occurs exclusively under Divided-Republican administrations. The red solid line is the calendar stock returns during Divided-Republican era, and the black dotted line is all other times (i.e., United-Republican, United-Democrats, and Divided-Democrats' calendar months all combined). As we clearly see, only Divided-Republican administrations are associated with low September returns.[30]

[27] During the pre-1947 period, the Unified-Republican times experienced frequent NBER recessions as well. Republicans held power during two-thirds or more of the NBER recessions, regardless of whether they controlled Congress.

[28] More generally, month-of-the-year effect refers to the empirical findings that aggregate stock markets perform significantly better or worse in certain calendar months. January is known to produce abnormally high small firm returns (Keim 1983; Reinganum 1983), while May (Bouman and Jacobsen 2002) and September, October (Hirshleifer et al. 2020) produce low returns.

[29] Media has been reporting this effect quite often: see, among others, https://www.bbc.co.uk/news/business-30793329

[30] Although the September return is affected by two exogenous shocks (the 9/11 attack in 2001 and the Global Financial Crisis in 2008, both occurring during the Divided-Republican era), there is evidence that even when excluding these two events and analyzing subsamples and equally-weighted returns, the same negative pattern emerges. This is demonstrated in Online Appendix. We also individually record the results for September of other political regimes (United-Republican regime, United-Democrats regime, and Divided-Democrats regime) in the same table.

Why is this September crash specific to Divided-Republican times? We suggest this empirical regularity can be attributed to the "August recess" and a subsequent "Back to School" Effect. Congress takes a break in July and August, known as the August recess. During this time, pro-business Republicans, including the president and Congress members, discuss their plans for the legislative agenda. After reconvening in September (back to school), they face bitter disappointment due to lack of control of Congress. Investors, absent political risk during the Summer break, build positive expectations but are dismayed by incumbent Republicans that translates into negative market reaction in September. Consistent with this hypothesis, we find that average asset prices during the Divided-Republican era rise from July to August, and then sharply drop in September.[31] Since the U.S. federal government's fiscal year starts on October 1st, September is a crucial month for Congress to finalize the federal budget and appropriations for the upcoming year, as well as address other urgent fiscal issues facing the government. Under the weak leadership of the Republican president, important activities are frequently disrupted, causing negative effects on the stock market.

This political-risk-based explanation on the calendar effects is markedly different from existing hypotheses. For instance, Hirshleifer et al. (2020) argue that low mood around Autumn (September and October) explains low stock returns. We confirm that the September effect we document does not continue into October, providing further support that it is unrelated to weather conditions. In fact, October isn't necessarily associated with low returns, as value-weighted excess returns are mildly positive. Moreover, negative equally-

[31]This pattern is already shown in Figure 5 (see below panel, solid red line). We also observe similar patterns across subsamples except Eisenhower's presidency (1955-1960). Since August recess started from late 1960s, Eisenhower's Divided-Republican times do not count toward our hypothesis.

weighted excess returns are concentrated in two extreme Octobers.[32] In a similar vein, both mutual fund tax harvesting and school holidays (Fang et al. 2018) explanations do not fit into this political cycle of September returns.

4.2 Political gridlock and small firms

In Section 2, we showed that the stock market difference conditional on government cycle is much higher in equally-weighted stock returns, suggesting that small firms are severely affected by this cycle. This also aligns with our proposed economic mechanism of political gridlock, as these adverse effects would impact small firms more than large firms. Undoubtedly, small firms tend to struggle more during difficult times as they exhibit greater bank dependence, cannot issue debt publicly, and face greater idiosyncratic risk (Gertler and Gilchrist 1994). Large firms, on the other hand, have considerable power in influencing the rules of the game (Zingales 2017), and can borrow to smooth the impact of a downturn (Gertler and Gilchrist 1994). Small business also lack the resources to actively form political connections through political donations or lobbying efforts (Faccio 2006, Hassan et al. 2023). In a similar vein, Liu et al. (2017) use Chinese examples to show that small firms (as well as firms with high leverage and high idiosyncratic risk) earn lower returns in the face of exogenous political shocks.

[INSERT Figure 6 HERE]

Inspired by this, we investigate the small firm issues through the lens of well-known size

[32] Stock markets crashed heavily in October 1987 and October 2008. Without them, October EW returns are only mildly negative or sometimes positive across subsamples.

anomalies (SMB of Fama and French 1993). We start by documenting that the size premium is concentrated almost entirely during unified governments, shown by the surprising SMB gap of 7% per annum (6% during United vs. -0.9% during Divided). Excluding January from the sample diminishes the SMB premium in both types of governments, but the SMB gap remains essentially the same at 6.6%. This outperformance of SMB under United governments come mostly from the long-side of the portfolio returns (small firms or 'S'), which we further show in Figure 6. In this figure, the decile portfolio returns formed on firm size are plotted to show that a monotonic decrease in the stock returns across firm size takes place only under United governments, consistent with our political gridlock explanation that small firms perform well when there is no or less political sabotage. We provide two additional checks on this result. First, we check that the business cycle explanation of Ahn et al. (2019) does not fit into our framework since about half of the 'troughs' as defined in that paper falls into the Divided governments. Next, while the Figure 6 result holds when we restrict our sample to post-1980s, the same exercise under the Presidential cycle does not work (see Online Appendix Figure A.4).

[INSERT Table 12 HERE]

We also run a monthly Fama-MacBeth regression that starts from 1927, and from 1983. The latter sample is to examine a recent debate on the disappearance of the size premium (see, among others, Hou and van Dijk 2019). In Panel A of Table 12, the coefficients as well as strong t-statistics say that a reliable negative relation between firm size and stock returns is established only when the United government is in place (columns (2) and (5)). Divided government regimes fail to show this pattern.[33] The SMB descriptive statistics

[33] We observe a robust pattern when running FMB regressions on earlier samples (1927:01 - 1982:12), or

shown in panel B indicate that the outperformance of SMB during United governments are not specific to sample periods.[34] By combining the results presented here with the fact that the United States has experienced more divided governments than united governments since the 1980s, we can conclude that the recent disappearance of size effect is entirely attributable to the government cycle.

In panel C, we run the factor redundancy test in the spirit of Asness et al. (2018) to check if SMB adds to competent asset pricing model. The regression model is specified as

$$SMB_t = \alpha + \beta RMRF_t + \beta_{-1} RMRF_{t-1} + h \times HML_t + m \times MOM_t + q \times QMJ_t + \varepsilon_t \quad (3)$$

where $RMRF$ is the market, HML the value factor, MOM the momentum factor, and QMJ the quality-minus-junk factor proposed in Asness et al. (2019). Aligning the sample period to match the QMJ sample, we see that the alpha is already 38 bps per month (t-statistics: 2.63) absent quality control. With a helping hand from QMJ, the size premium strengthens to 45 bps with a stronger t-statistics. All the other political regimes (Divided government and two presidential dummies), on the other hand, show poor SMB alpha but revives after QMJ enters the regression. This result is presented in the Online Appendix (Table B.4).

excluding B/M as a covariate.

[34]The subsample period definitions come from Asness et al. (2018). The Golden age period has diminished slots as the United (Divided) governments perfectly coincide with the time when Democratic (Republican) presidents were ruling the White House. Quite interestingly, 85% of the 'embarrassment period' (1980:01 - 1999:12) met Divided governments, whereas half of 'golden age' (1957:07 - 1979:12) is dominated by United governments.

5 Conclusion

The present paper provides a government cycle argument for the U.S. economy that recovers a number of interesting sets of asset pricing and macroeconomic patterns. In particular, our findings demonstrate the significant impact of government types on stock market performance. Small firms are particularly negatively affected during divided regimes, where political conflict is more likely to occur. In line with this, size anomalies are much more pronounced during United governments. Our results are consistent with theoretical models relating lower returns during Divided-Republican governments to rising political gridlock. Finally, using close-tie election results, we glimpse a causal mechanism of government status on stock market performance.

The presidential puzzle that Democratic presidents earn higher equity premia than Republican presidents can be refined into a president-government framework. We show that only one political regime, Republican presidents with Divided governments (Divided-Republicans), are associated with dismal performance in the stock market. Republican presidents controlling the Congress, on the other hand, earn substantially high equity premia, often times dominating Democratic presidents from any government. Divided-Republican times are when economy falls into a bad state and the September effect is salient. Importantly, the government cycle emerges as a new stylized fact, revealing significant differences between the treasury premium, political conflict, and the ratio of Congressional bills vetoed, which are not present throughout the presidential cycle. Overall, the government angle deepens our understanding of political cycles in relation to financial markets and the general economy.

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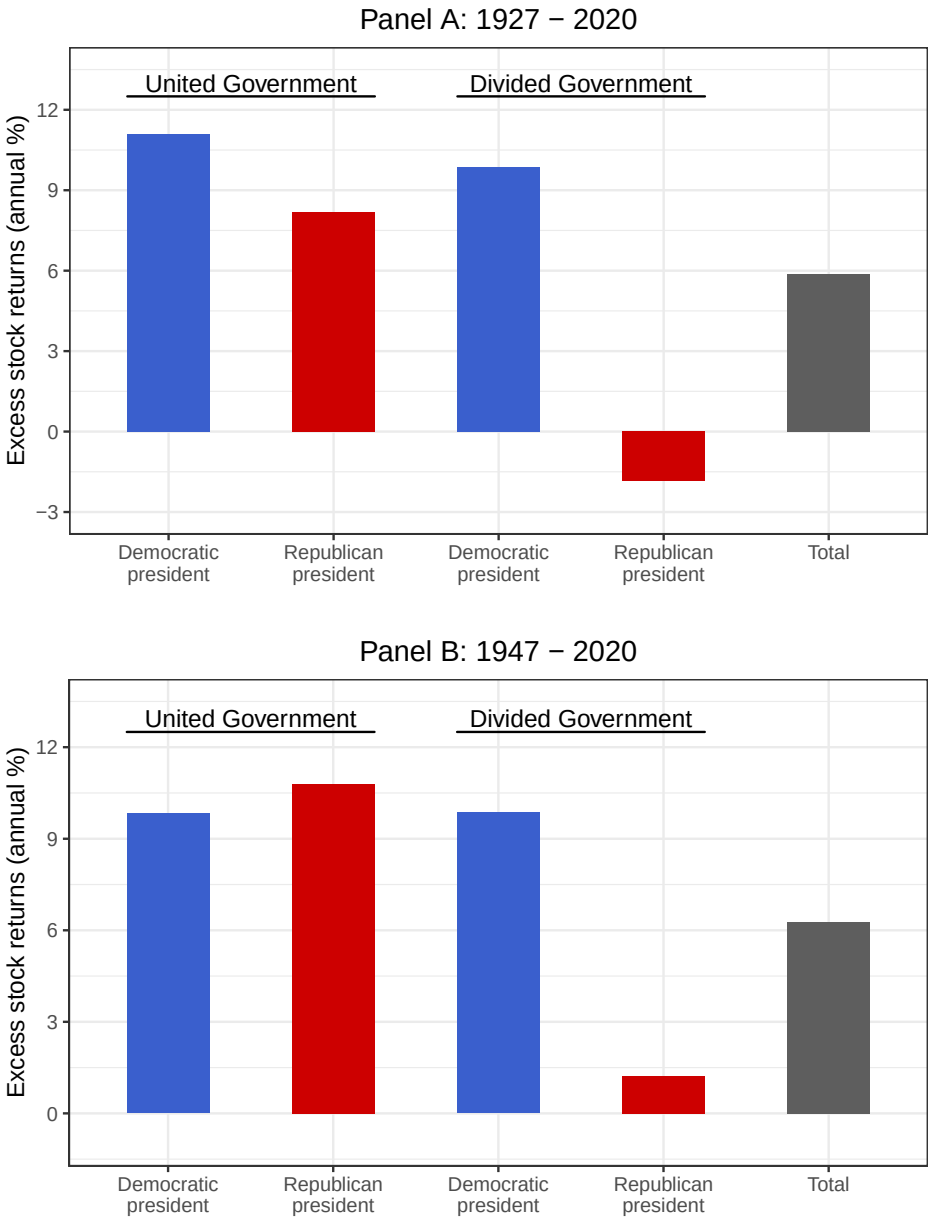


Figure 1: President-Government Two-way Sorts

Note: These figures show average excess stock returns (per annum) using two-way sorts: presidents' political party and the government status. The above panel uses the full sample (1927:01 - 2020:12), and the below panel uses the postwar sample (1947:01 - 2020:12). The labels on X-axis are the political party of the presidents. The last column (Total) shows the average excess stock returns during the relevant periods.

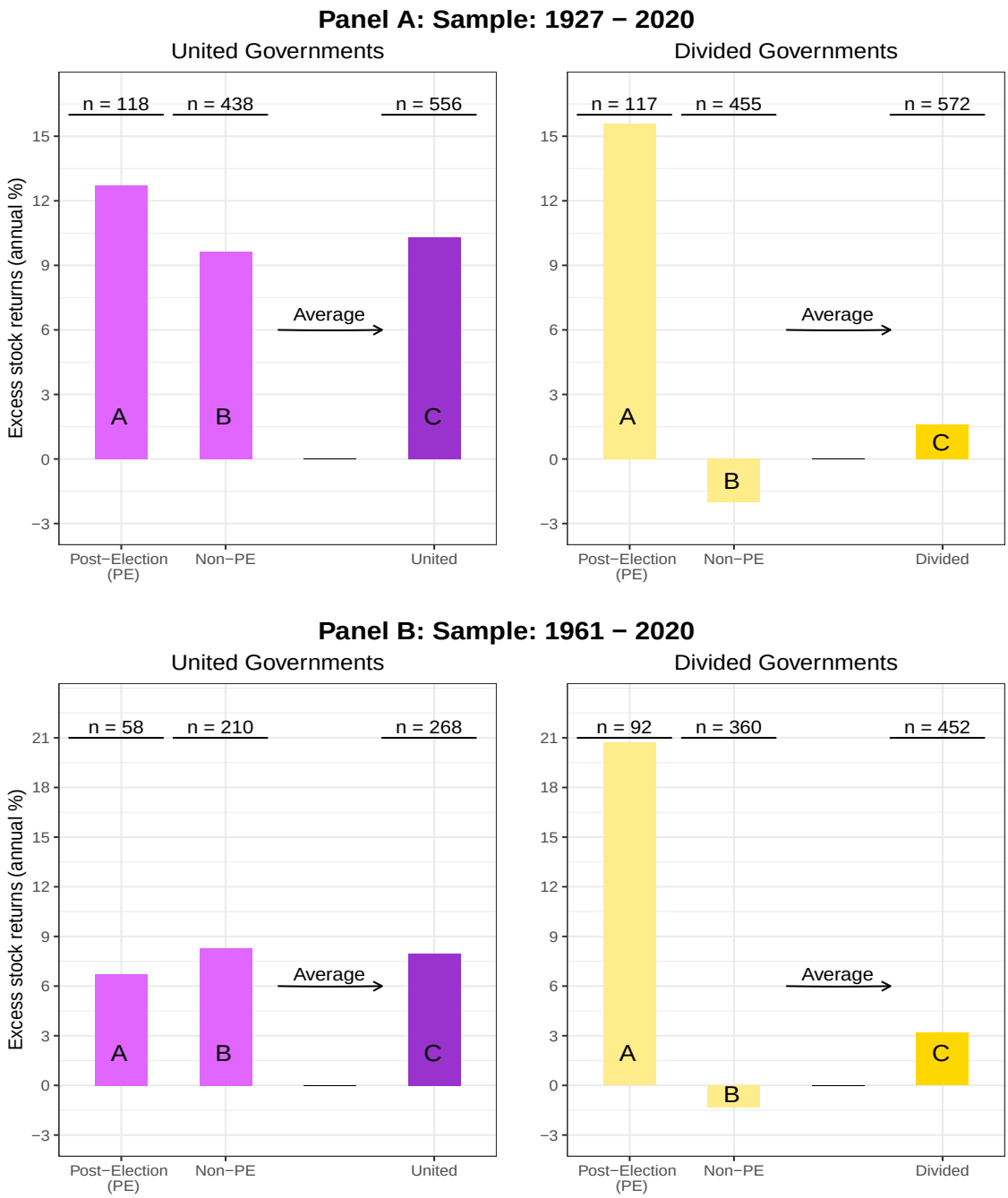
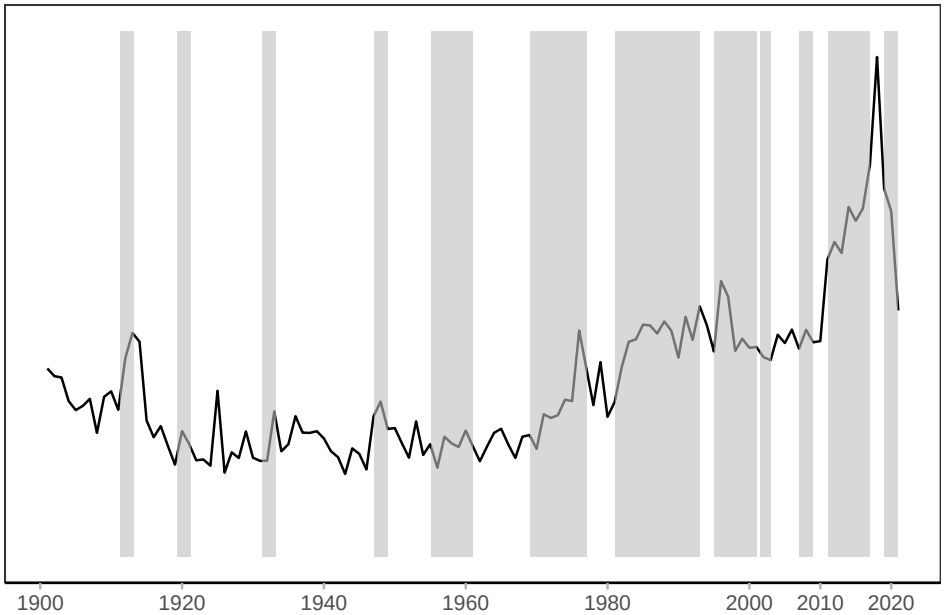


Figure 2: Government Cycle: Post-Election vs. Non Post-Election months

Note: These figures show average excess stock returns (per annum) during two groups of periods: 'Post-Election (PE)' indicates five months after midterm election and presidential election periods. Non-PE are all other months. The above panel uses the full sample (1927:01 - 2020:12), and the below panel uses the latter half sample (1961:01 - 2020:12) during when political polarization has been known to rise. n is the number of months that fall into each category.



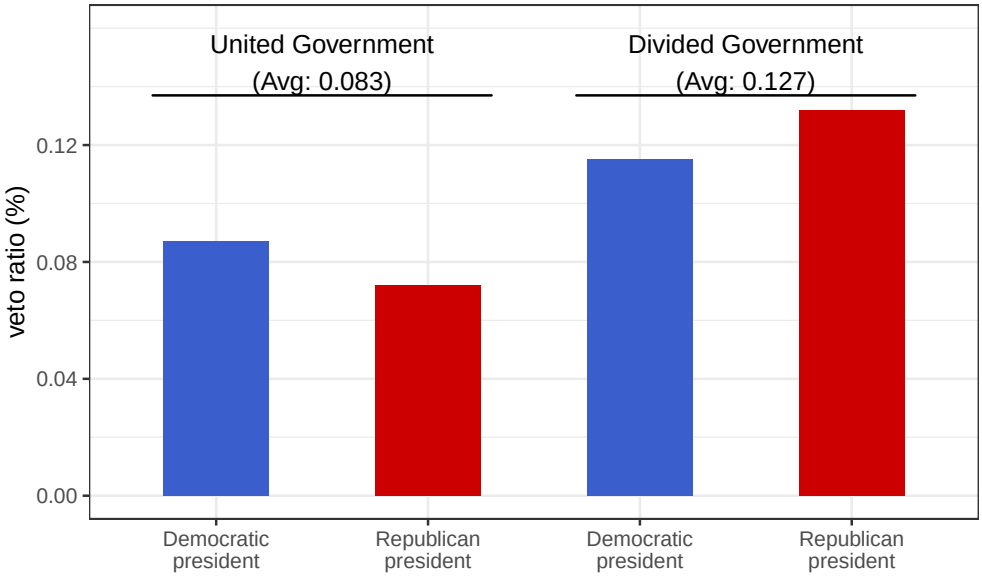


Figure 3: Political Gridlock

Note: The above figure plots Political Conflict Index (PCI, Azzimonti 2018) at a yearly frequency, where higher value indicates higher level of lawmakers' disagreement about policy captured in a semantic search method (the measure is set to have a value of 100 in 1990 by Azzimonti 2018). The shaded areas are times when the government is divided. The below figure shows veto ratio of the incumbent president using bills data from 1947 (80th) to May 2020 (114th) Congress. The labels on X-axis are the political party of the presidents. The first two bar plots correspond to United governments, and the last two correspond to Divided governments.

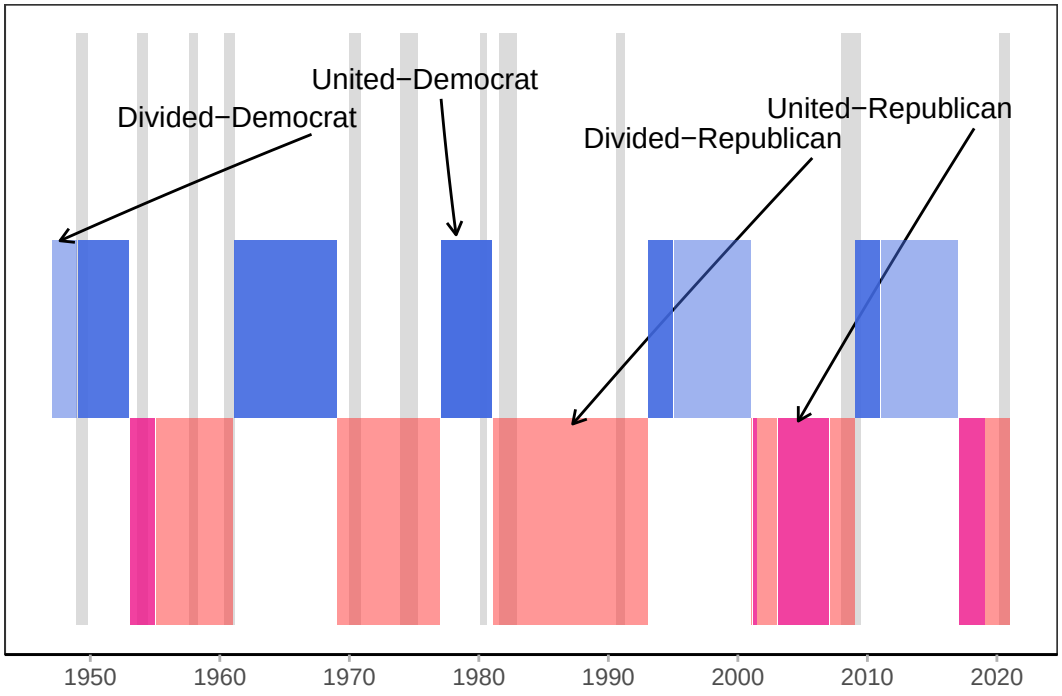


Figure 4: NBER recessions and Political Regimes

Note: This figure plots NBER recession periods and the political regimes. Grey shaded areas are NBER recession months. The red-colored areas in the bottom are times when Republican presidents rule the White House. Darker red indicates United governments and shallow red indicates Divided governments. Similarly, the blue-coloured areas in the middle are times when the sitting president is from the Democratic Party. Darker blue indicates United governments and shallow blue indicates Divided governments.

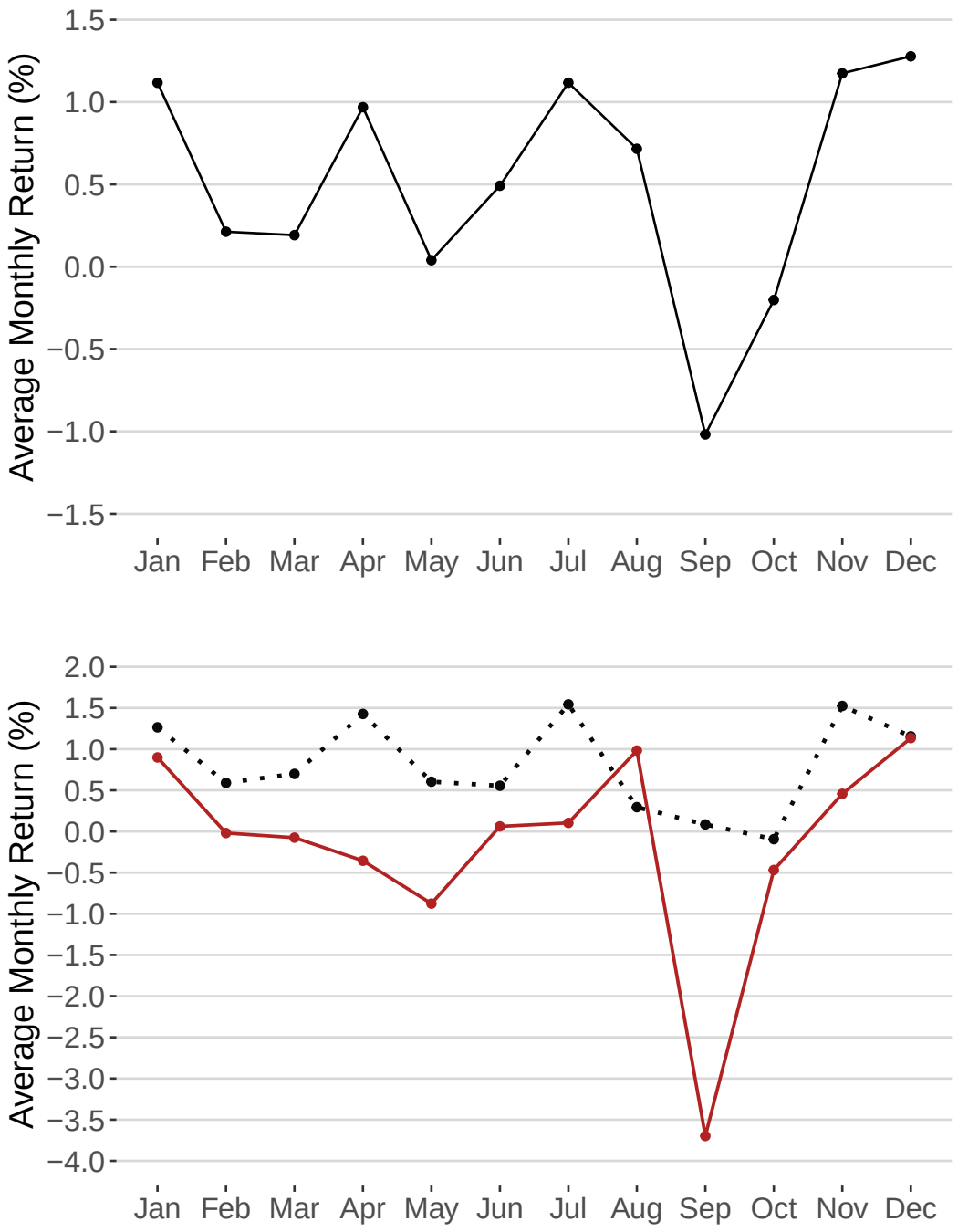


Figure 5: September Effect and Divided-Republican Regimes

Note: This figure plots value-weighted excess stock returns by each month. The upper panel shows average of 94 calendar returns by month (1927 - 2020). The lower panel shows calendar month returns specific to Divided-Republican times (solid red line) and all other regimes (United-Republican, United-Democrats, and Divided-Democrats all combined; dotted black line).

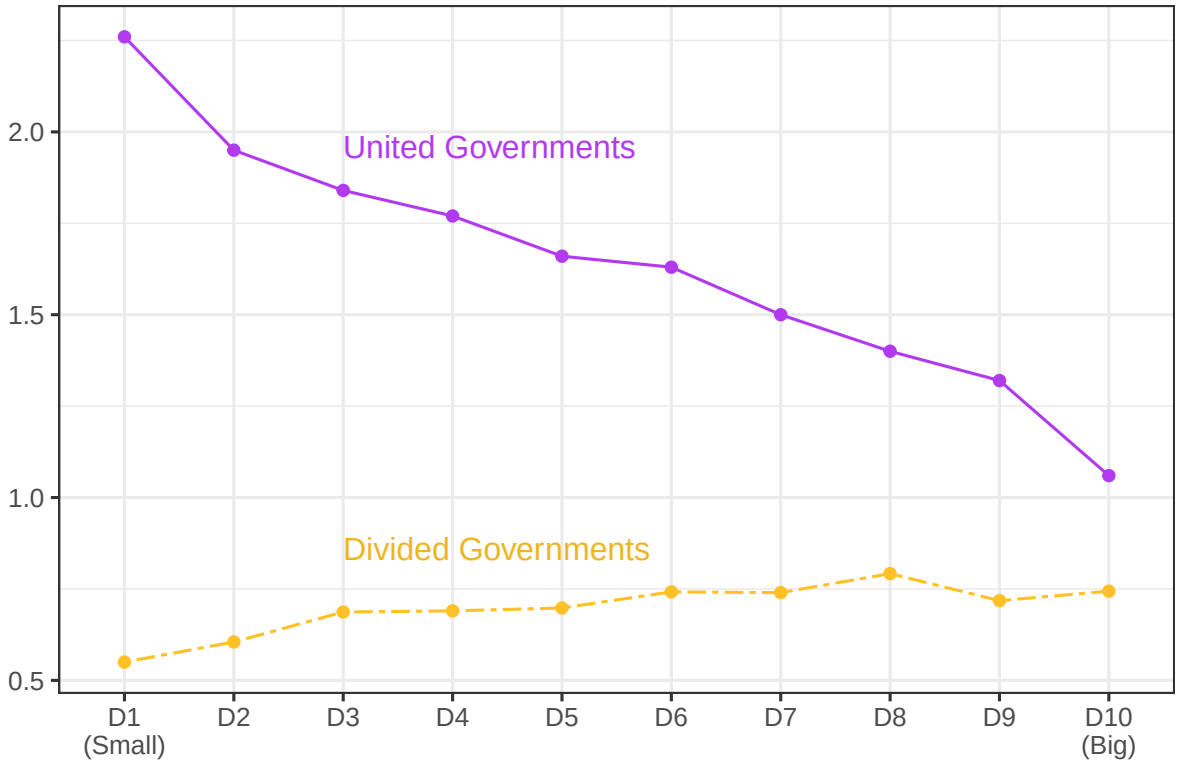


Figure 6: Decile portfolio returns formed on firm size

Note: This figure plots decile portfolio returns formed on firm size, obtained from Professor French's website. The data spans 1927 - 2020 monthly. Purple line is the average decile returns formed on firm size under the United governments, and yellow line is the average decile size returns under the Divided governments.

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Table 1: Political Regimes

Year (Congress)	The White House		Congress		Government
	President	Party	Senate	House	
1927-28 (70th)	Coolidge	R	R	R	United
1929-30 (71st)	Hoover	R	R	R	United
1931-32 (72nd)	Hoover	R	R	D	Divided
1933-34 (73rd)	Roosevelt	D	D	D	United
1935-36 (74th)	Roosevelt	D	D	D	United
1937-38 (75th)	Roosevelt	D	D	D	United
1939-40 (76th)	Roosevelt	D	D	D	United
1941-42 (77th)	Roosevelt	D	D	D	United
1943-44 (78th)	Roosevelt	D	D	D	United
1945-46 (79th)	Roosevelt / Truman	D	D	D	United
1947-48 (80th)	Truman	D	R	R	Divided
1949-50 (81st)	Truman	D	D	D	United
1951-52 (82nd)	Truman	D	D	D	United
1953-54 (83rd)	Eisenhower	R	R	R	United
1955-56 (84th)	Eisenhower	R	D	D	Divided
1957-58 (85th)	Eisenhower	R	D	D	Divided
1959-60 (86th)	Eisenhower	R	D	D	Divided
1961-62 (87th)	Kennedy	D	D	D	United
1963-64 (88th)	Kennedy / Johnson	D	D	D	United
1965-66 (89th)	Johnson	D	D	D	United
1967-68 (90th)	Johnson	D	D	D	United
1969-70 (91st)	Nixon	R	D	D	Divided

Continued on next page

Table 1 – continued from previous page

Year	The White house		Congress		Government
	President	Party	Senate	House	
1971-72 (92nd)	Nixon	R	D	D	Divided
1973-74 (93rd)	Nixon / Ford	R	D	D	Divided
1975-76 (94th)	Ford	R	D	D	Divided
1977-78 (95th)	Carter	D	D	D	United
1979-80 (96th)	Carter	D	D	D	United
1981-82 (97th)	Reagan	R	R	D	Divided
1983-84 (98th)	Reagan	R	R	D	Divided
1985-86 (99th)	Reagan	R	R	D	Divided
1987-88 (100th)	Reagan	R	R	D	Divided
1989-90 (101st)	Bush	R	D	D	Divided
1991-92 (102nd)	Bush	R	D	D	Divided
1993-94 (103rd)	Clinton	D	D	D	United
1995-96 (104th)	Clinton	D	R	R	Divided
1997-98 (105th)	Clinton	D	R	R	Divided
1999-00 (106th)	Clinton	D	R	R	Divided
2001-02 (107th)	W. Bush*	R	D	R	Divided
2003-04 (108th)	W. Bush	R	R	R	United
2005-06 (109th)	W. Bush	R	R	R	United
2007-08 (110th)	W. Bush	R	D	D	Divided
2009-10 (111st)	Obama	D	D	D	United
2011-12 (112nd)	Obama	D	D	R	Divided
2013-14 (113rd)	Obama	D	D	R	Divided
2015-16 (114th)	Obama	D	R	R	Divided
2017-18 (115th)	Trump	R	R	R	United
2019-20 (116th)	Trump	R	R	D	Divided

Note: This table records the political affiliation of United States Presidents and the majority party of the Senate and the House of

Representatives. R indicates Republican party, and D indicates Democratic party. The definition of government status, whether it is united or divided, follows United States House of Representatives Archives. The asterisk in Bush's term (2001 - 2002) is an exception as the early four months (2001:02 - 2001:05) saw united regime. Until 72nd Congress, the term lasted from March 4 of the starting year to March 4 two years later. For instance, 70th Congress met from March 4, 1927 to March 4, 1929. 73rd Congress met from March 4, 1933 to January 3, 1935. 74th Congress met from January 3, 1935 to January 3, 1937. From 74th Congress, the meeting was held from January 3 of the starting year to January 3 two years later. For ease of exposition, the first column contains two years where Congress was held mostly throughout those periods.

Panel A: Full sample

	United	Divided	Difference
Mean (%)	**0.86*** **	0.13	**0.73** **
	(3.90)	(0.58)	**(2.28)**
1% percentile (%)	-13.8	-16.9	3.1
25% percentile (%)	-1.65	-2.40	0.75
Median (%)	1.30	0.71	0.59
75% percentile (%)	3.68	3.42	0.26
99% percentile (%)	12.1	11.8	0.3
Std. Dev (%)	5.19	5.51	
Skewness	-0.43	-0.62	
Kurtosis	9.16	10.1	
No. of Obs.	556	572	

Panel B: Excluding 1% - 99%

	United	Divided	Difference
Mean (%)	**0.83*** **	0.25	**0.59** **
	(4.47)	(1.33)	**(2.23)**
1% Percentile (%)	-12.0	-11.8	0.2
25% Percentile (%)	-1.64	-2.3	0.66
Median (%)	1.29	0.726	0.56
75% Percentile (%)	3.60	3.40	0.20
99% Percentile (%)	10.0	9.83	0.17
Std. Dev (%)	4.35	4.38	
Skewness	-0.64	-0.51	
Kurtosis	3.90	3.47	
No. of Obs.	556	572	

Panel C: Sharpe Ratio

	United	Divided	Full sample
Annual Sharpe Ratio	0.57	0.08	0.32

Table 2: Distributions of Monthly Excess Returns

Note: This table records the distribution of monthly excess returns (log returns less log T-bill, VWR-TBL, in monthly percentage) using the full sample (1927:01 - 2020:12). Panel A uses the full sample, Panel B uses the full sample but with 1% trimmed to confirm that united versus divided results are not driven by extreme outliers. Panel C records annual in-sample Sharpe Ratio. In Panel A and B, the parentheses in the mean row indicates t-statistics, with corresponding ***/**/* denoting the statistical significance at 1%/5%/10% level.

Panel A: Full sample (1927:01 - 2020:12)

		(1) VWR-TBL	(2) VWR-INF	(3) EWR-TBL	(4) EWR-INF
Governments	United	10.30	9.90	16.78	16.39
	($N = 556$)	(3.66)	(3.49)	(4.07)	(3.99)
	Divided	1.60	3.37	-0.00	1.76
	($N = 572$)	(0.56)	(1.19)	(-0.01)	(0.49)
	Difference	**8.7****	6.53*	**16.78*****	**14.62*****
		(2.08)	(1.61)	**(3.07)**	**(2.79)**
Presidents	Democrat	10.72	9.71	15.70	14.69
	($N = 574$)	(4.22)	(3.74)	(4.11)	(3.83)
	Republican	0.88	3.36	0.57	3.06
	($N = 554$)	(0.28)	(1.11)	(0.15)	(0.79)
	Difference	**9.85****	6.35	**15.13*****	**11.63****
		(2.20)	(1.48)	**(2.59)**	**(2.08)**

Panel B: Post-World War II (1947:01 - 2020:12)

		(1) VWR-TBL	(2) VWR-INF	(3) EWR-TBL	(4) EWR-INF
Governments	United	10.11	10.25	16.84	16.98
	($N = 340$)	(4.20)	(4.27)	(5.16)	(5.26)
	Divided	3.87	5.23	2.00	3.36
	($N = 548$)	(1.54)	(2.07)	(0.61)	(1.02)
	Difference	**6.23***	5.02	**14.84*****	**13.62*****
		(1.76)	(1.42)	**(3.16)**	**(2.89)**
Presidents	Democrat	9.84	9.87	12.92	12.95
	($N = 408$)	(4.61)	(4.61)	(4.36)	(4.42)
	Republican	3.21	4.84	3.23	4.86
	($N = 480$)	(1.16)	(1.73)	(0.88)	(1.31)
	Difference	**6.63***	5.03	**9.69****	**8.09***
		(1.92)	(1.43)	**(2.00)**	**(1.69)**

Table 3: Average Stock Market Returns Under Political Regimes

Note: This table records average returns across political regimes. Panel A presents full sample results. Panel B uses the post-war period. VWR-TBL is the excess stock returns (value-weighted returns less 3 months T-bill); VWR-INF is the real stock returns (value-weighted returns less US inflation rate); EWR-TBL and EWR-INF are computed using equal-weighted portfolio returns. Numbers in parenthesis are t-statistics, adjusted using the Newey-West procedure with 24 lags. ***/**/* denote the statistical significance at 1%/5%/10% level.

Countries	Sample	United Government	Divided Government	Difference
United Kingdom	1922 - 2022	5.04	-9.06	**14.10****
		(2.47)	(-1.08)	(**2.11**)

Table 4: Government Cycle in the UK

Note: This table records average returns across government cycle in the United Kingdom. Data used is monthly 1922 - 2022. Excess stock returns (value-weighted returns less 3 months T-bill) obtained from Global Financial Database are reported. Numbers in parenthesis are t-statistics, adjusted using Newey-West procedure with 6 lags. We also check Newey-West 24 lags and find that the results have statistical significance at the 10% level (unreported). ***/**/* denote the statistical significance at 1%/5%/10% level.

	(1)	(2)	(3)	(4)	(5)
	Full-sample	Sub-sample (No NY firms)	Sub-sample (No TX firms)	Sub-sample (No CA firms)	Sub-sample (No S&P 500 firms)
State-GOV$_{s,t}$	**0.118*** **	**0.122*** **	**0.101*** **	**0.062* **	**0.120*** **
	(3.78)	**(3.75)**	**(3.07)**	**(1.90)**	**(3.49)**
State-PRESID$_{s,t}$	**0.060* **	0.044	**0.067** **	-0.028	**0.067* **
	(1.88)	(1.30)	**(2.08)**	(-0.86)	**(1.93)**
State-EPU$_{s,t}$	**-0.047* **	**-0.049* **	-0.023	-0.013	-0.044
	(-1.68)	**(-1.72)**	(-0.82)	(-0.45)	(-1.48)
No. of firm-month obs.	1,621,260	1,417,926	1,451,481	1,387,559	1,474,330
Adj. R squared (%)	8.7	8.7	8.9	8.5	8.5
Time FE	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes

Table 5: State Level Government Cycle of Stock Returns

Note: This table reports the monthly panel regression of the excess one-month-ahead firm stock returns that are headquartered in each U.S. state on state level government dummy (1 when the state level government is united; 0 divided), state level presidential dummy (1 when the state governor is from the Democratic party; 0 Republican party), and the state-EPU (Elkamhi et al. Forthcoming). The data spans from 1992 to 2020. Sub-sample results in columns (2) - (4) address the concern about some states having more firms than others. Sub-sample result in column (5) exclude firms when they are listed as part of S&P 500 index. They are moved back to this analysis once they disband from the index. The t-statistics are based on standard errors clustered at the firm-level. ***/**/* denote the statistical significance at 1%/5%/10% level.

Governments \ Presidents	Democratic presidents	Republican presidents	Average growth
United	5.40% (4.00)	3.31% (1.77)	4.51% (4.18)
	(40 years)	(29 years)	(69 years)
Divided	2.22% (2.68)	1.91% (2.61)	2.01% (3.57)
	(16 years)	(36 years)	(52 years)
Average growth	4.49% (4.42)	2.54% (2.89)	121 years
	(56 years)	(65 years)	

Table 6: Average Economic Growth, 1900 to 2020

Note: This table records average real GDP growth in percentage term. The sample period is between 1900 and 2020. Numbers in parentheses are t-statistics, adjusted using Newey-West procedure with 6 lags. Number of years in each category is also presented. They are calculated to the nearest integer, so sum up may not be exact.

Panel A: Full sample (1927:01 - 2020:12) but not post-election months

		(1) VWR-TBL	(2) VWR-INF	(3) EWR-TBL	(4) EWR-INF
Governments	United	9.64	9.12	14.90	14.38
	($N = 438$)	(3.32)	(3.06)	(3.68)	(3.52)
	Divided	-2.00	-0.19	-5.30	-3.49
	($N = 455$)	(-0.60)	(-0.06)	(-1.28)	(-0.86)
	Difference	**11.64*** **	**9.31** **	**20.20*** **	**17.87*** **
		(2.73)	**(2.29)**	**(3.82)**	**(3.56)**
Presidents	Democrat	9.17	8.22	13.2	12.25
	($N = 456$)	(3.42)	(2.97)	(3.38)	(3.11)
	Republican	-1.98	0.37	-4.36	-2.01
	($N = 437$)	(-0.54)	(0.10)	(-0.94)	(-0.41)
	Difference	**11.15** **	**7.85* **	**17.56*** **	**14.26** **
		(2.38)	**(1.78)**	**(2.99)**	**(2.58)**

Panel B: Post-World War II (1947:01 - 2020:12) but not post-election months

		(1) VWR-TBL	(2) VWR-INF	(3) EWR-TBL	(4) EWR-INF
Governments	United	10.63	10.88	15.81	16.06
	($N = 267$)	(4.15)	(4.26)	(4.49)	(4.58)
	Divided	-0.10	1.31	-4.11	-2.70
	($N = 436$)	(-0.04)	(0.46)	(-1.15)	(-0.76)
	Difference	**10.74** **	**9.57** **	**19.92*** **	**18.76*** **
		(2.40)	**(2.12)**	**(3.94)**	**(3.80)**
Presidents	Democrat	8.46	8.61	10.45	10.61
	($N = 323$)	(3.49)	(3.55)	(3.16)	(3.23)
	Republican	0.16	1.83	-2.50	-0.83
	($N = 380$)	(0.05)	(0.59)	(-0.62)	(-0.21)
	Difference	**8.29** **	**6.78* **	**12.95*** **	**11.43** **
		(2.25)	**(1.88)**	**(2.65)**	**(2.44)**

Table 7: Average Returns Under Political Regime, Post-Election Months Removed

Note: This table records average returns across political regimes. Unlike Table 3, we remove sample months that fall into post-election months as defined by Chan and Marsh (2021). Panel A presents full sample results. Panel B uses the post-war period. VWR-TBL is the excess stock returns (value-weighted returns less 3 months T-bill); VWR-INF is the real stock returns (value-weighted returns less US inflation rate); EWR-TBL and EWR-INF are computed using equal-weighted portfolio returns. Numbers in parentheses are t-statistics, adjusted using the Newey-West procedure with 24 lags. ***/**/* denote the statistical significance at 1%/5%/10% level.

Panel A: Dependent variable is VWR_TBL (%)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
GOV	**1.120****			**1.145****		**0.886****	**0.918****
	(2.47)			**(2.54)**		**(2.06)**	**(2.14)**
PRESID		**0.898****			**0.892****	0.543	0.523
		(2.29)			**(2.25)**	(1.55)	(1.46)
Election^{mid}			**1.280*****	**1.334*****	**1.264*****		**1.313*****
			(3.18)	**(3.32)**	**(3.08)**		**(3.24)**
Election^{pres}			0.333	0.272	0.367		0.304
			(0.67)	(0.55)	(0.74)		(0.61)
No. of Obs.	1128	1128	1128	1128	1128	1128	1128
Constant?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
$\mathbf{X}_t^{macro}$	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2 (%)	2.5	2.3	2.1	3.0	2.6	2.7	3.0

Panel B: Dependent variable is EWR_TBL (%)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
GOV	**2.092*****			**2.115*****		**1.730*****	**1.757*****
	(3.37)			**(3.45)**		**(3.12)**	**(3.21)**
PRESID		**1.530*****			**1.532*****	**0.837***	**0.826***
		(2.71)			**(2.69)**	**(1.85)**	**(1.80)**
Election^{mid}			**2.193*****	**2.292*****	**2.165*****		**2.260*****
			(3.29)	**(3.47)**	**(3.20)**		**(3.40)**
Election^{pres}			**1.319***	1.21	**1.376***		1.256
			(1.66)	(1.58)	**(1.75)**		(1.63)
No. of Obs.	1128	1128	1128	1128	1128	1128	1128
Constant?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
$\mathbf{X}_t^{macro}$	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2 (%)	4.4	3.6	3.6	5.4	4.6	4.6	5.6

Table 8: Regressions on Political Dummies and Macroeconomic Variables

Note: This table presents regressions of monthly excess value-weighted stock returns (Panel A) and excess equal-weighted stock returns (Panel B) on political variable dummies and macroeconomic variables. The data spans from 1927 to 2020. Macroeconomic variables include log of dividend-price ratio (dp), default yield (dfy), term spread (ts), long-term yield (lty), relative interest rate (rrel), aggregate book-to-market ratio (bm), equity issuing and repurchasing relative to the price level (ntis), inflation (infl), and stock market variance (svar). They are scaled before we conduct the regression, and results are suppressed for brevity. Numbers in parenthesis are t-statistics, adjusted using 24 lags Newey-West standard errors. ***/**/* denote the statistical significance at 1%/5%/10% level.

Election Date	The White House	Senate	House of Rep.	Election Results (Subsequent government)
Nov 1930	N/A	R: 48 - D: 47 (1.04%)	R: 218 - D: 216 (0.46%)	Divided (1931-1932)
Nov 1942	N/A	-	R: 209 - D: 222 (2.99%)	United (1943-1944)
Nov 1950	N/A	R: 47 - D: 49 (2.08%)	-	United (1951-1952)
Nov 1952	-	R: 49 - D: 47 (2.08%)	R: 221 - D: 213 (1.84%)	United (1953-1954)
Nov 1954	N/A	R: 47 - D: 48 (1.04%)	-	Divided (1955-1956)
Nov 1956	-	R: 47 - D: 49 (2.04%)	-	Divided (1957-1958)
Nov 1994	N/A	R: 52 - D: 48 (4%)		Divided (1995-1996)
Nov 1996	N/A	-	R: 226 - D: 207 (4.37%)	Divided (1997-1998)
Nov 1998	N/A	-	R: 223 - D: 211 (2.76%)	Divided (1999-2000)
Nov 2000	R: 271 - D: 266 (0.93%)	R: 50 - D: 50 (0%)	R: 221 - D: 212 (2.07%)	Divided* (2001-2002)
Nov 2002	N/A	R: 51 - D: 48 (3%)	-	United (2003-2004)
Nov 2006	N/A	R: 49 - D: 49 (0%)	-	Divided (2007-2008)
Nov 2010	N/A	R: 47 - D: 51 (4%)	-	Divided (2007-2008)
Nov 2016	-	R: 52 - D: 48 (4%)	-	United (2017-2018)

Table 9: Close-tie Elections in the U.S., 1927 - 2020

Note: This table records the history of close-tie U.S. elections. The percentages in each of the column 2, 3, and 4 represent the following: (Column 2): percentage difference between electoral votes to Republican vs. Democratic; (Column 3): percentage difference of Senate seats; and (Column 4): percentage difference of the House of Representatives seats. N/A in the second column indicates that the presidential election was not held on that date. The control of Senate as a result of presidential election in 2000 changed hands several times. The inauguration of George W. Bush met government trifecta, blurring the interpretation. so we treat them as unified.

Panel A. Close-tie election is defined as vote margins less than 3% (9 elections)

Governments	Barely Unified	Barely Divided	Gap
VWR-TBL (per annum %)	14.10	-8.05	**22.15****
	(2.84)	(-0.93)	**(2.32)**
EWR-TBL (per annum %)	22.26	-5.61	**27.87****
	(2.92)	(-0.54)	**(2.29)**

Panel B. Close-tie election is defined as vote margins less than 5% (14 elections)

Governments	Barely Unified	Barely Divided	Gap
VWR-TBL (per annum %)	13.12	-0.78	**13.91****
	(3.45)	(-0.13)	**(2.04)**
EWR-TBL (per annum %)	20.26	-1.65	**21.91****
	(3.38)	(-0.24)	**(2.55)**

Table 10: Close-tie Election Results

Note: This table records the close-tie U.S. elections and stock market outcomes, following the close-election definition in Table 9. Both value-weighted excess returns (VWR-TBL) and equally-weighted excess returns (EWR-TBL) for the government regimes as a result of close elections. ***/**/* denote the statistical significance at 1%/5%/10% level.

Panel A: Dependent variable is log EPU index

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
United	**-0.036***		**-0.079*****	**-0.036***		**-0.084*****	**-0.055****
Government	**(-1.65)**		**(-4.01)**	**(-1.70)**		**(-4.20)**	**(-2.36)**
Democratic		**0.145*****	**0.166*****		**0.158*****	**0.181*****	-0.003
President		**(6.88)**	**(8.50)**		**(7.33)**	**(8.97)**	(-0.15)
NBER				0.024	**0.065*****	**0.072*****	
				(0.97)	**(2.61)**	**(2.88)**	
CFNAI							**-0.049****
							(-2.51)
Observations	1451	1451	1451	1451	1451	1451	645
Constant?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2 (%)	2.0	3.2	4.1	3.0	3.6	4.6	4.0

Panel B: Dependent variable is stock market volatility (%)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
United	**-0.393****		**-0.309***	-0.276		**-0.456*****	**-0.838*****
Government	**(-2.18)**		**(-1.71)**	(-1.64)		**(-2.64)**	**(-5.01)**
Democratic		**-0.330***	-0.201		0.246	**0.444*****	-0.171
President		**(-1.83)**	(-1.11)		(1.57)	**(2.79)**	(-0.99)
NBER				**2.721*****	**2.822*****	**2.855*****	
				(8.36)	**(8.70)**	**(8.84)**	
CFNAI							-0.404
							(-1.25)
Observations	1140	1140	1140	1140	1140	1140	645
Constant?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2 (%)	0.4	0.3	0.5	12.7	12.6	13.1	6.6

Table 11: Regressions of EPU Index and Monthly Stock Market Volatility on Political Dummies

Note: This table presents regressions of monthly EPU index and stock market volatility on political variable dummies. In both panels, independent variables are political dummies (united government dummy and democratic president dummy) and NBER recession dummy. We also include CFNAI in place of NBER dummy. Dependent variable in Panel A (Panel B) is log of EPU index (monthly stock market volatility of French et al. (1987)) Except for regression (7) where CFNAI has limited coverage, all other regressions in Panel A span 1900:01 - 2020:12 and Panel B 1927:01 - 2020:12. Numbers in parenthesis are t-statistics, adjusted using robust standard errors. ***/**/* denote the statistical significance at 1%/5%/10% level.

Panel A: Fama-Macbeth regression

	Full sample (1927:01 - 2020:12)			Post-1980s (1983:01 - 2020:12)		
	(1)	(2)	(3)	(4)	(5)	(6)
	All samples	United only	Divided only	All samples	United only	Divided only
log (ME)	**-0.13*** **	**-0.23*** **	-0.03	**-0.09***	**-0.20*** **	-0.05
	(-3.70)	**(-4.42)**	(-0.71)	**(-1.91)**	**(-2.84)**	(-0.81)
Intercept	Yes	Yes	Yes	Yes	Yes	Yes
B/M included?	Yes	Yes	Yes	Yes	Yes	Yes
No. of Obs.	2,474,568	876,294	1,598,274	1,604,919	408,711	1,196,208

Panel B: SMB subsample

Sample period	Regime	Mean (monthly %)	SD (%)	n
Golden age (1957:07 - 1979:12)	Entire period	0.35	2.88	270
	United Government only	**0.91**	2.61	132
	Divided Government only	-0.19	3.04	138
Embarrassment (1980:01 - 1999:12)	Entire period	-0.06	2.69	240
	United Government only	**0.31**	2.26	36
	Divided Government only	-0.12	2.76	204
	Democratic Presidents only	-0.13	3.07	96
	Republican Presidents only	-0.00	2.42	144
Resurrection (2000:01 - 2020:12)	Entire period	0.25	3.25	252
	United Government only	**0.41**	2.43	100
	Divided Government only	0.15	3.69	152
	Democratic Presidents only	0.15	3.88	108
	Republican Presidents only	0.33	2.70	144

Panel C: SMB interaction with QMJ (1957:01 - 2020:12)

$$SMB_t = \alpha + \beta RMRF_t + \beta_{-1} RMRF_{t-1} + h \times HML_t + m \times MOM_t + q \times QMJ_t + \varepsilon_t$$

Regime	α	$t(\alpha)$	R-squared	QMJ included?
United Government	**0.38*** **	**2.63**	0.19	No
	0.45* **	**3.30**	0.28	Yes

Table 12: Size Matters Under United Governments

Note: This table records the size effect conditional on the government cycle. Panel A performs month-by-month Fama-MacBeth regressions of stock returns on size and book-to-market equity (B/M). Panel B provides descriptive statistics in subsamples. In the golden age, united (divided) governments perfectly coincide with Democratic (Republican) presidents. Panel C presents the SMB (Fama-French size factor) performance across the regimes. QMJ is the Quality-Minus-Junk factor in Asness et al. (2018). In both panels, the parentheses indicate t-statistics, with corresponding ***/**/* denoting the statistical significance at 1%/5%/10% level.

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Divided Government and the Stock Market

Online Appendix

Author(s) details removed for FIRS Submission

A Political Gridlock and Stock Market - Media

GRIDLOCK IS GOOD?

Election concerns have not made much of a ripple in markets so far this year, with investors consumed by the Federal Reserve's jumbo-sized rate hikes to tame surging inflation. read more

Worries over the vote could become more prominent as November approaches. Many investors believe divided government makes sweeping reforms less likely to pass, keeping the investment backdrop more stable.

"The market tends to like gridlock," said Nadia Lovell, senior U.S. equity strategist at UBS Global Wealth Management. "I think it's fair to say a split government is what investors right now expect and are positioned for."

Historical data showed that stocks tend to do better in periods of divided government, although investors cautioned that data is limited and markets have generally risen over time regardless of the governmental make-up.

Average annual S&P 500 returns have been 14% in a split Congress and 13% in a Republican-held Congress when a Democrat is in the White House, according to data since 1932 analyzed by RBC Capital Markets. That compares to 10% when Democrats controlled the presidency and Congress.

(CNN) — Now that CNN has projected Republicans will win the House of Representatives, it's time to consider a Washington where both parties have some control.

Despite underperforming on Election Day, the GOP gains will have a major impact on what's accomplished in the coming two years.

Additional climate change policy? Don't count on it. National abortion legislation? Not a chance. Voting rights? Not likely.

Plus, Republicans have indicated they will use any leverage they can find – including the debt ceiling – to force spending cuts.

While you might immediately think this is all a recipe for a stalemate in Washington, I was surprised to read the argument, backed up by research, that the US government actually overperforms during periods of divided government.

Figure A.1: Screenshots show Reuters (above) and CNN (below) article

Figure A.1 shows two media coverages (Reuters link, CNN link) on the divided governments. Both argue that political gridlock might be helpful, which is opposite to what we argue.

B Additional stock market results

This section records additional stock market results.

In Table B.1, we extend the Table 1 back to 1871. Using this information, we present the stock market results back to 1871, where stock returns data come from Professor Amit Goyal's website.[35] We calculate the equivalent of excess value-weighted stock returns (VWR-TBL) by calculating the log monthly stock return less log t-bill, where the T-bill data prior to 1920 is obtained via Welch and Goyal (2008) (See Section 1 of that paper). Panel A in Table B.2 shows two interesting findings. First, the government cycle still holds as United government tends to earn higher excess returns than Divided government, but the statistical significance is weak. Given that the average monthly excess return during the pre-CRSP era (1871 - 1926) is -2.1%, the united government premium of -1.09% per month is in fact above average. Second, the presidential cycle works in an opposite direction, as Republican presidents tend to earn higher returns (-0.51% per month) than Democratic counterparts (-5.92%). For the 150 years of sample (1871:03 - 2020:12) presented in Panel B, we merge CRSP data (1927:01 and onwards) with the pre-CRSP data that we introduce in Panel A. We reach similar conclusions as in the main body of paper. In particular, one of the striking finding that the divided governments earned zero excess

[35] An alternative source is Yale ICF. We confirm that pre-CRSP results are virtually the same using this database.

returns is quantitatively unchanged - throughout 150 years in the U.S. stock market history, divided governments earned -0.03% excess returns per month on average. Finally, Panel C depicts the same 150 years results as in Panel B, but this time without election premium of Chan and Marsh (2021). We see that the government premium becomes stronger at 7.32% per annum, higher than the presidential premium of 6.96%.

Figure A.2 demonstrates that political party dominance in either the Senate or the House alone does not lead to higher stock market returns. This supports our view that it is the government trifecta that matters for the stock market.

Year	The White house		Congress		Government	
	President	Party	Senate	House		
1871-72 (42nd)	Grant	R	R	R	United	
1873-74 (43rd)	Grant	R	R	R	United	
1875-76 (44th)	Grant	R	R	D		Divided
1877-78 (45th)	Hayes	R	R	D		Divided
1879-80 (46th)	Hayes	R	D	D		Divided
1881-82 (47th)	Garfield/Arthur*	R	D*	R		Divided
1883-84 (48th)	Arthur	R	R	D		Divided
1885-86 (49th)	Cleveland	D	R	D		Divided
1887-88 (50th)	Cleveland	D	R	D		Divided
1889-90 (51st)	Harrison	R	R	R	United	
1891-92 (52nd)	Harrison	R	R	D		Divided
1893-94 (53rd)	Cleveland	D	D	D	United	
1895-96 (54th)	Cleveland	D	R	R		Divided
1897-98 (55th)	McKinley	R	R	R	United	
1899-00 (56th)	McKinley	R	R	R	United	
1901-02 (57th)	McKinley / T. Roosevelt	R	R	R	United	
1903-04 (58th)	T. Roosevelt	R	R	R	United	
1905-06 (59th)	T. Roosevelt	R	R	R	United	
1907-08 (60th)	T. Roosevelt	R	R	R	United	
1909-10 (61st)	Taft	R	R	R	United	
1911-12 (62nd)	Taft	R	R	D		Divided
1913-14 (63rd)	Wilson	D	D	D	United	
1915-16 (64th)	Wilson	D	D	D	United	
1917-18 (65th)	Wilson	D	D	D	United	
1919-20 (66th)	Wilson	D	R	R		Divided
1921-22 (67th)	Harding	R	R	R	United	
1923-24 (68th)	Harding / Coolidge	R	R	R	United	
1925-26 (69th)	Coolidge	R	R	R	United	

Table B.1: Political Regimes (pre-CRSP)

Note: This table records the political affiliation of United States Presidents and the majority party of the Senate and the House of Representatives during the pre-CRSP era. R indicates Republican party, and D indicates Democratic party. The definition of government status, whether it is united or divided, follows United States House of Representatives Archives. The asterisk in 47th Congress is an exception. The Congress term lasted from March 4 of the starting year to March 4 two years later. For instance, 42nd Congress met from March 4, 1871 to March 4, 1873.

Panel A: Pre-CRSP (1871:03 - 1926:12)

Governments	United ($N = 406$)	Divided ($N = 204$)	Difference
	-1.09	-3.55	2.4
	(-0.40)	(-1.18)	(0.58)
Presidents	Democrats ($N = 192$)	Republicans ($N = 478$)	Difference
	-5.92*	-0.51	-5.4
	(-1.71)	(-0.20)	(-1.30)

Panel B: Entire periods (1871:03 - 2020:12)

Governments	United ($N = 962$)	Divided ($N = 836$)	Difference
	5.49* **	-0.03	**5.52***
	(2.63)	(-0.01)	**(1.71)**
Presidents	Democrats ($N = 766$)	Republicans ($N = 1032$)	Difference
	6.55* **	0.24	**6.36***
	(3.01)	(0.11)	**(1.93)**

Panel C: Entire periods (1871:03 - 2020:12) without post-election premium

Governments	United ($N = 763$)	Divided ($N = 664$)	Difference
	4.93 **	-2.34	**7.32** **
	(2.28)	(-0.92)	**(2.18)**
Presidents	Democrats ($N = 608$)	Republicans ($N = 819$)	Difference
	5.55 **	-1.43	**6.96** **
	(2.46)	(-0.62)	**(2.07)**

Table B.2: Stock market results including Pre-CRSP era

Note: This table records average returns across political regimes. We use pre-CRSP (1871:03 - 1926:12) stock returns data and present two results: Panel A shows 56 years of pre-CRSP results, and Panel B adds the main CRSP sample, which completes 150 years of stock market return data. Panel C removes post midterm- and presidential- months following Chan and Marsh (2021) from this entire sample. Due to data limitation, all results are stock market index (value-weighted equivalent) for pre-CRSP, and VWR-TBL (value-weighted returns less 3 month T-bill) post 1927:01. Numbers in parenthesis are t-statistics, adjusted using Newey-West procedure with 24 lags. ***/**/* denote the statistical significance at 1%/5%/10% level.

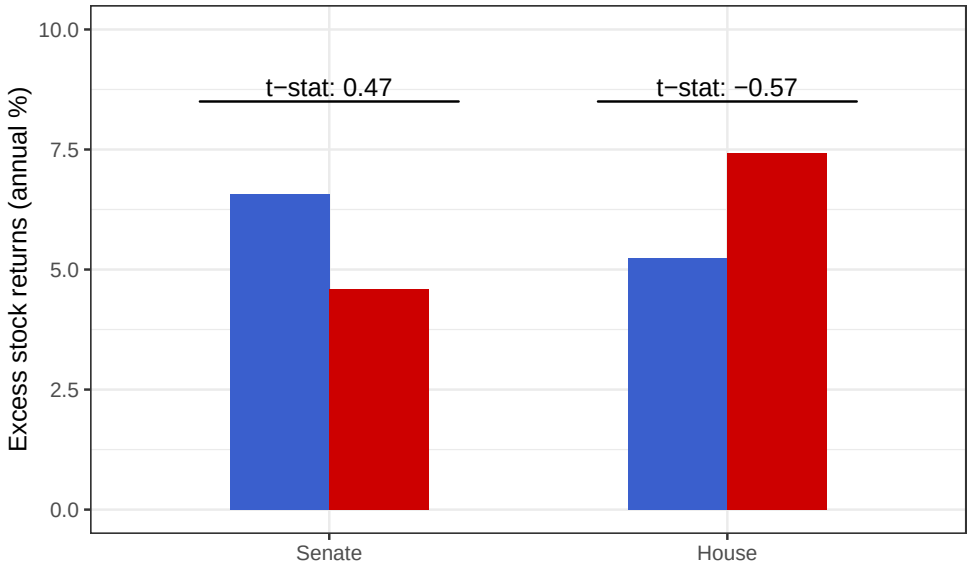

Figure A.2: This graph presents the average annualized excess value-weighted returns for each partisan majority in the Senate (on the left) and in the House of Representatives (on the right). The sample period is 1927 to 2020. In both, the left blue bar indicates the excess stock returns when the Democratic party ruled the Senate (the House), and the right red bar when the Republican party ruled the Senate (the House). The t-statistics of return difference between Democrat- and Republican-majority in each of the Senate and the House is indicated above.

Figure A.3 shows a similar picture to Figure 1 in the main draft: in real terms (i.e., stock returns less inflation rate rather than the standard T-bill rate), Unified-Republican regimes earn comparable excess stock returns to Democratic presidents. Again, real returns in Divided-Republican times show dismal performance, dragging down the overall U.S. stock market performance.

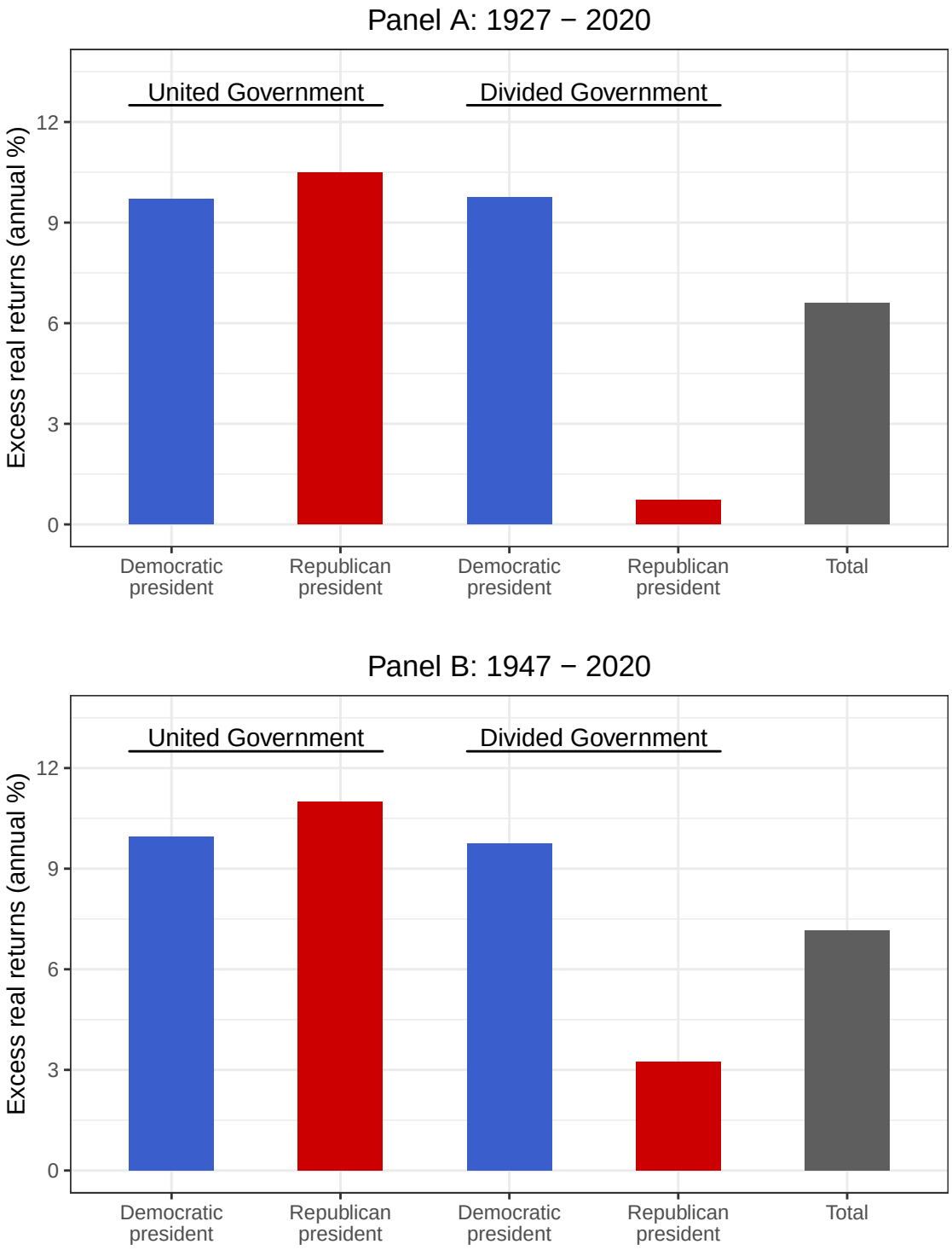

Figure A.3: These figures show average real stock returns (value-weighted stock returns less inflation) using two-way sorts: presidents' political party and the government status. The above panel uses the full sample (1927:01 - 2020:12), and the below panel uses the postwar sample (1947:01 - 2020:12). The labels on X-axis are the political party of the presidents. The last column (Total) shows the average excess stock returns during the relevant periods.

C Treasury Premium

This section establishes the treasury premium across the government cycle. We obtain U.S. Treasury returns from CRSP US Treasury and Inflation Indexes. Although the original dataset downloaded from CRSP spans from 1941, we have excluded the first few years in order to provide comparable results to the post-war period discussed in the main draft. Table B.3 demonstrates that under United governments, the average excess return on Treasuries, including 30-year, 20-year, and 10-year bonds, is negative. During the Divided regimes, treasury premium is strongly positive, resulting in a statistically significant government gap. On the other hand, we see that the treasury premium story does not match with the presidential cycle. Overall, the data in this table aligns with our narrative that divided governments correlate with negative economic outcomes, and investors seek the safety of the U.S. Treasury market during this period.

		(1)	(2)	(3)
		B30_TBL	B20_TBL	B10_TBL
Governments	United	-2.71	-2.05	-1.52
		(-1.87)	(-1.60)	(-1.69)
	Divided	3.88	3.75	2.73
		(2.21)	(2.60)	(2.51)
	Difference	**-6.60*** **	**-5.76*** **	**-4.20*** **
		(-2.76)	**(-3.04)**	**(-3.10)**
Presidents	Democrat	-0.77	-0.21	-0.19
		(-0.48)	(-0.15)	(-0.19)
	Republican	3.16	3.01	2.20
		(1.95)	(2.22)	(2.11)
	Difference	-3.96	-3.24	-2.40
		(-1.62)	(-1.53)	(-1.54)

Table B.3: Average treasury premium under political regime

Note: This table records average treasury premium per annum across political regimes. B30_TBL is the returns on U.S. Treasuries with 30 years to maturity less three-month treasury bond; B20_TBL and B10_TBL are similarly defined using the same three-month treasury bond. The Treasury data spans from 1947 to 2020. Numbers in parenthesis are t-statistics, adjusted using the Newey-West procedure with 24 lags. ***/**/* denote the statistical significance at 1%/5%/10% level.

D SMB and United Governments

Sample period: 1957:01 - 2020:12

$SMB_t = \alpha + \beta RMRF_t + \beta_{-1} RMRF_{t-1} + h \times HML_t + m \times MOM_t + q \times QMJ_t + \varepsilon_t$				
Regime	α	$t(\alpha)$	R-squared	QMJ included?
Full sample	0.12	1.17	0.10	No
	0.43	4.37	0.27	Yes
United Government	**0.38**	**2.63**	0.19	No
	0.45	3.30	0.28	Yes
Divided Government	0.01	0.05	0.11	No
	0.44	3.32	0.28	Yes
Democratic presidents	0.15	0.88	0.17	No
	0.46	2.97	0.34	Yes
Republican presidents	0.11	0.88	0.16	No
	0.35	2.86	0.25	Yes

Table B.4: Additional results on SMB interaction with QMJ

Note: All political regimes (United / Divided governments; Democratic / Republican presidents) as well as full-sample analysis are recorded. Coefficients and corresponding t-statistics for other variables are suppressed for brevity.

Table B.4 extends the factor redundancy tests conducted in the main body of the paper (Panel C in Table 12). While full sample analysis shows that SMB alpha is weak at 12 bps per month (t-statistics: 1.17), controlling for QMJ factor resurrects SMB to 43 bps (t-statistics: 4.37), consistent with Asness et al. (2019). When we divide the sample into political regimes, the similar implications are derived. However, as documented in the main body of the paper, size premium is already strong at 38 bps (t-statistics: 2.63) when the status of government is unified. When we consider all the elements, we can confirm

that the outstanding performance of SMB, subject to the political cycle, is exclusive to the United States government.

Figure A.4 extends the Figure 6 results by focusing on the post-1980s sample (1983 - 2020) where size effect is known to disappear in the United States. Consistent with the political gridlock explanation, conditional size effect still exists when the United governments are in place. On the other hand, Divided governments fail to show the negative relationship between firm size and portfolio returns. What's more surprising is the below panel where we replicate the same exercise conditional on the presidential cycle as a placebo test. As is clear from the figure, both the Democratic presidents and Republican presidents regimes fail to document the size effect. Hence, we conclude the unique role of the status of governments on the stock market through the lens of size phenomenon that receive considerable attention from investors as well as academics.

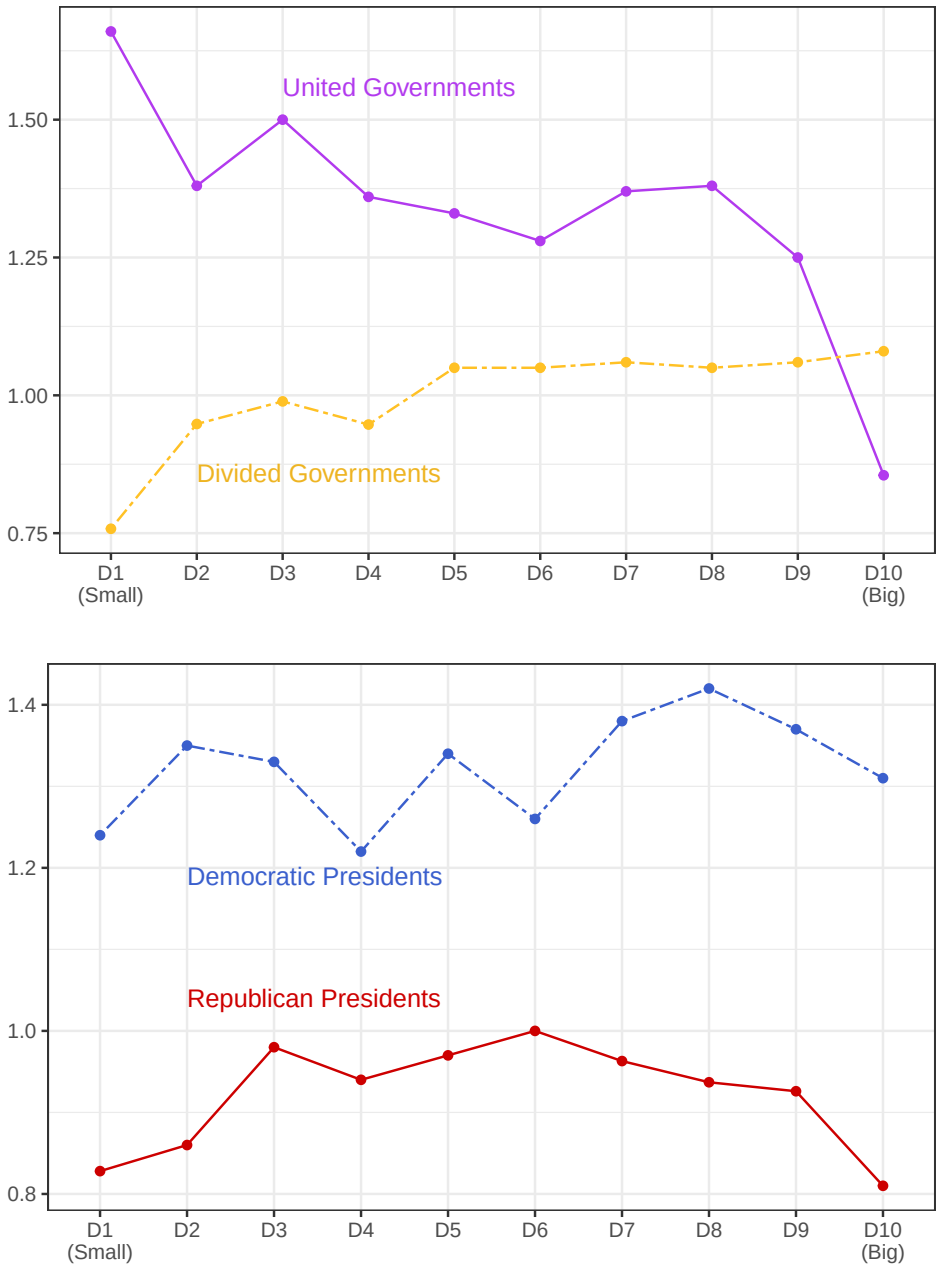

Figure A.4: This figure extends the Figure 6 results by focusing on the post-1980s sample (1983 - 2020) where size effect is known to disappear in the United States. The above panel plots monthly decile portfolio returns sorted on firm size conditional on the status of governments. The below panel plots the same portfolio returns (also post-1980s sample) conditional on the sitting presidents.

E Congressional Bills

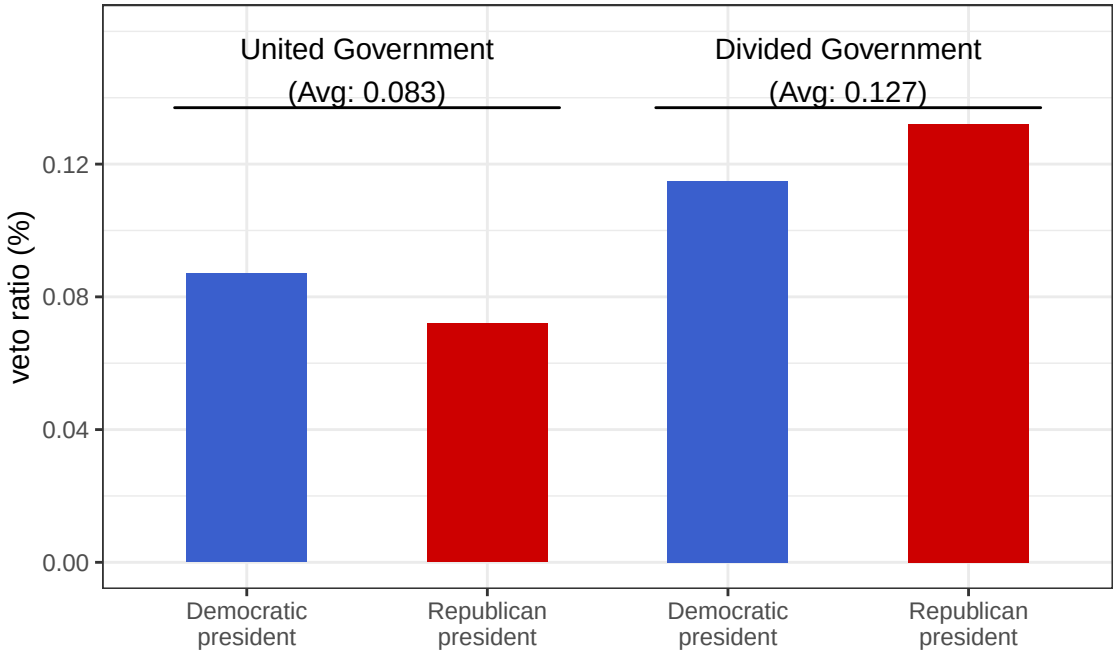

Figure A.5: This figure shows the veto ratio of the incumbent president. All proposed bills but not related to relief are considered. We use bills data from 1947 (80th) to May 2020 (114th) Congress. The labels on X-axis are the political party of the presidents. The first two bar plots correspond to United governments, and the last two correspond to Divided governments.

Here, we use all congressional bills proposed from 80th Congress to 114th Congress from Congressional Bills Project Database (Adler and Wilkerson 2014). The database, at the time of writing, enumerates all congressional bills proposed from 1947 to May 2020. We are interested in how many proposed bills are eventually vetoed by the sitting president, as this indicates a form of political conflict. We don't consider bills that aim to help specific

individuals because they're not related to the current economic situation.[36] Figure A.5 shows that Divided governments tend to meet higher ratio of vetoes. The large number of bills introduced in Congress means that even a small percentage difference makes a significant impact. In fact, a 0.04% (0.127% - 0.083%) difference translates to 2.5 more bills being vetoed during divided governments compared to united governments.

F Additional results on September Effect

Table B.5 provides additional explanations on the September effect. For each subsample periods, we calculate September monthly returns (log value-weighted stock returns less log 3-month T-bill; log equal-weighted stock returns less log 3-month T-bill) and record them. Computing with raw returns less raw 1-month T-bill show very similar results (undocumented). We observe that negative stock market responses in September is concentrated almost entirely when Republican presidents are ruling with divided Congress. Since Unified-Republican and Divided-Democratic regimes are small in some subsamples, we also tried Divided-Republican versus other-three-regimes-combined approaches where relevant, and find that only Divided-Republican regimes stand out.

[36] Quite a few bills have the title "For the relief of PERSON A". We remove those observations.

Panel A. Subsample Analysis on September Effects

Sample period	President-Government	September returns Value-weighted (monthly %)	September returns Equal-weighted (monthly %)	n
Full sample (1927 - 2020) 94 Septembers	**Rep. - Div.**	**-3.7**	**-3.86**	34
	Rep. - Uni.	-0.01	-0.01	12
	Dem. - Div.	-0.13	-0.37	14
	Dem. - Uni.	0.39	1.07	34
First half (1927 - 1973) 47 Septembers	**Rep. - Div.**	**-4.03**	**-3.89**	13
	Rep. - Uni.	-0.9	-1.83	6
	Dem. - Div.	-1.8	-1.95	2
	Dem. - Uni.	0.1	0.51	26
Second half (1974 - 2020) 47 Septembers	**Rep. - Div.**	**-3.49**	**-3.84**	21
	Rep. - Uni.	0.88	1.8	6
	Dem. - Div.	0.15	-0.11	12
	Dem. - Uni.	1.36	2.89	8
Post-war (1947 - 2020) 74 Septembers	**Rep. - Div.**	**-2.76**	**-2.74**	32
	Rep. - Uni.	1.44	1.71	8
	Dem. - Div.	-0.13	-0.37	14
	Dem. - Uni.	0.98	1.86	20
Middle sample (1940 - 1999) 60 Septembers	**Rep. - Div.**	**-2.25**	**-2.01**	26
	Rep. - Uni.	3.11	1.44	2
	Dem. - Div.	1.76	1.41	7
	Dem. - Uni.	0.27	0.89	25
Recent era (1991 - 2020) 30 Septembers	**Rep. - Div.**	**-3.82**	**-4.27**	8
	Rep. - Uni.	0.88	1.8	6
	Dem. - Div.	0.15	-0.11	12
	Dem. - Uni.	2.68	4.6	4

Panel B. Excluding two outliers (2001:09 and 2008:09)

Full sample	**Rep. - Div.**	**-3.29**	**-3.25**	32
Second half	**Rep. - Div.**	**-2.78**	**-2.81**	19
Post-war	**Rep. - Div.**	**-2.26**	**-2.02**	30
Recent era	**Rep. - Div.**	**-1.66**	**-1.17**	6

Table B.5: September Effect and Political Cycles

Note: This table records the September monthly stock returns (excess value-weighted and excess equal-weighted returns) conditional on political cycles. n is the number of Septembers in the relevant samples. Panel A includes all relevant September data, while Panel B specifically focuses on Republican-Divided September returns, excluding two outliers (September 2001 and September 2008). Both 2001 and 2008 Septembers suffer from exogenous shocks and happen to fall into Republican-Divided times.

References for Online Appendix

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