Corporate Cash and Political Uncertainty*

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Abstract

How does political uncertainty affect firms' cash saving behavior? We show theoretically that uncertainty causes firms to build up cash balances in advance of the uncertain event, then draw down the balances afterwards. Using gubernatorial elections as an exogenous source of uncertainty, we find empirical support for our predictions. Firms save an extra quarter's worth of cash before high-uncertainty quarters and draw down balances after uncertainty resolves. Political uncertainty affects savings far more than payout because firms that save the most pre-election rarely engage in payout. Rather, these firms save by adjusting the number and magnitude of pre-election equity issuances.

Keywords: corporate saving, cash, political uncertainty, gubernatorial elections, economic policy uncertainty.

JEL Codes: D72, G31, E21

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1. Introduction

Research shows that firms actively manage their cash holdings in response to their economic environment. Keynes (1934) describes two benefits for holding cash: first, to save transaction costs on raising funds and, second, to fund activities and investments if other sources of funding are unavailable. Uncertainty can affect firms' cash holdings through this second, precautionary motive. However, it is unclear ex ante whether higher uncertainty will have a positive or negative effect on cash holdings. Uncertainty can increase the cost of tapping external financing, thereby decreasing firms' willingness to rely on external markets for financing and increasing firms' incentives to engage in precautionary savings. However, uncertainty also decreases firms' investment,[1] reducing the need for precautionary savings in the first place. These two competing effects could cancel out or one could dominate the other empirically. Thus, it is unclear theoretically whether uncertainty should increase or decrease firm cash holdings.

The empirical literature exploring the relation between firm cash holdings and uncertainty generally focuses on firm-level and endogenous sources of uncertainty. Cash flow volatility (Han and Qiu, 2007; Palazzo, 2012), product market threats and competition (Hoberg, Phillips, and Prabhala, 2014; Haushalter, Klasa, and Maxwell, 2007), R&D volatility (Brown and Petersen, 2011), and magnitude of uncertain tax benefits (Hanlon, Maydew, and Saavedra, 2017) are all significantly related to firm cash holdings. However, particularly given the large number of studies exploring correlations between firm characteristics and cash holdings,[2] it is difficult to determine from this literature whether changes to firm cash holdings are driven by uncertainty or simultaneous decisions about other firm policies. For example, if higher cash flow volatility is significantly related to higher cash holdings, is the relation driven by differences in investment policies, which in part determine cash flow volatility, or the higher volatility itself?

A challenge in any study of uncertainty is identifying an exogenous source of uncertainty. To examine the effects of uncertainty on firm cash holdings, we examine firm cash balances around U.S. gubernatorial elections. The timing of gubernatorial elections is widely recognized as exogenous.[3] Firms depend on the policy environments in which they operate (Pástor

[1] Leahy and Whited (1996) provide the first empirical evidence of this relation.

[2] See, for example, Opler, Pinkowitz, Stulz, and Williamson (1999), Almeida, Campello, and Weisbach (2004), Acharya, Almeida, and Campello (2013), Acharya, Davydenko, and Strebulaev (2012), and He (2018).

[3] See, for example, Jens (2017), Çolak, Durnev, and Qian (2017), and Atanassov, Julio, and Leng (2016). We also confirm our results are stronger for closer, or more competitive, elections. However, close elections are endogenous (Jens, 2017), correlated with both the presidential election cycle and state economic conditions. We leave these results, and a discussion of the problems associated with using close elections as a measure of uncertainty, to our Internet Appendix.

and Veronesi, 2012, 2013), and elections bring a chance that a new governor with new policies might be elected. Thus, gubernatorial elections are a relevant source of uncertainty to firms. Consistent with this expectation, Jens (2017) shows that the political uncertainty caused by gubernatorial elections significantly affects firm investment decisions. Thus, gubernatorial elections provide a useful setting in which to answer questions about uncertainty's effects on firm cash holdings.

An additional challenge to examining the effects of uncertainty is separating the effects of uncertainty from the general business cycle. There are a number of time-series uncertainty proxies, including VIX and the Baker, Bloom, and Davis (2016) economic policy uncertainty (EPU) index, that are correlated with firm cash holdings. However, these proxies are also correlated with the business cycle. Thus, it is difficult to disentangle the effects of the business cycle on firm cash holdings from the effects of uncertainty. In contrast, gubernatorial elections are staggered across the business cycle, with at least several occurring in each year, setting up an ideal difference-in-difference estimation. Thus, across the business cycle, we can compare the cash holdings of "treated" firms—firms headquartered in states with gubernatorial elections—against the cash holdings of "control" firms—firms headquartered in states without gubernatorial elections. Our empirical setting provides a unique opportunity to examine the causal effects of uncertainty on firm cash holdings.

To guide our empirical tests, we begin with the model Riddick and Whited (2009) use to examine precautionary savings and adjust the productivity shock to reflect the kind of predictable political uncertainty elections create. In the Riddick and Whited (2009) model, a firm makes optimal investment and financing decisions in a dynamic setting while facing random shocks to productivity. To incorporate political uncertainty into the model, we create two productivity regimes, a high productivity regime and a low productivity regime, in which firms are more and less likely to receive high productivity shocks, respectively. These regimes correspond to better and worse political environments for the firm. Every sixteen quarters, which corresponds to the gubernatorial election cycle, there is a chance that a firm switches productivity regimes. The firm can observe election quarters when productivity regime switches may occur and adjust investment and financing decisions accordingly.

Our model provides a series of testable predictions regarding firms' savings, payout, and investing behavior around elections. Simulations of the model suggest that firms increase cash holdings before periods of higher uncertainty to avoid tapping costly external financing during more uncertain times. We expect firms to increase cash holdings before high political uncertainty created by elections and draw down these cash holdings after uncertainty is resolved. Payout and investment should decline before and rebound following elections. However, simulations show that changes to cash holdings are much larger than the declines

in payout and investment, suggesting that precautionary motives for savings dominate and changes to cash holdings cannot be explained solely by the expected declines in investment and payout.

We begin by examining cash holdings (cash scaled by total assets) in quarters leading up to and following gubernatorial elections. In a difference-in-difference (DD) framework, we are effectively comparing the cash holdings of firms headquartered in election states with the cash holdings of firms headquartered in non-election states. Four quarters before the political uncertainty spike caused by elections, we find cash holdings in election-state firms are 0.432% of assets higher. Our estimates are economically meaningful. Using as a baseline our sample's mean cash holdings of 22% of assets, cash holdings of election-state firms are 1.96% higher than cash holdings of non-election-state firms. As uncertainty begins to resolve, we find firms draw down these cash balances. In the quarter of and two quarters following elections, treated firms have cash balances 1.86%, 1.96% and 1.48% of assets lower than control firms. Generally, we find changes in firms' cash balances around elections match simulations from our model; uncertainty increases firms' cash holdings.

Next, we test the second prediction of our model that increases in cash balances should be larger than decreases in investment and payout. It is unlikely that higher cash balances three and four quarters before elections are a result of a decline in investment. Jens (2017) shows the decline in investment caused by political uncertainty from gubernatorial elections occurs one quarter before to two quarters after elections. In contrast, firms increase cash balances before uncertainty spikes. However, it has long been recognized that payout policy and cash holdings are linked (Miller and Rock, 1985; Rozeff, 1982) and studies examine the effects of uncertainty on payout (Chay and Suh, 2009; Walkup, 2016; Lee, Gupta, Chen, and Lee, 2015). Thus, we pay particular attention to demonstrating our cash holdings results are not driven by uncertainty affecting payout policy, rather than savings policy.

We examine firm savings (change in cash scaled by lagged total assets) in the same regression framework and find a statistically and economically significant increase in savings in election-year firms. Two to four quarters before elections, firms in election states have cumulative savings that are 2.19% higher than firms headquartered in non-election states. The sample average quarterly savings is 1% (75^{th} percentile is 2%), so the magnitude of our election-year results suggest firms save over an additional quarter's worth of cash in the year leading up to the election.

We find payout and investment are affected by increased political uncertainty caused by elections, but changes in payout and investment are not sufficient to explain changes in firm cash balances. Consistent with Jens (2017), we find the decline in investment caused by political uncertainty is centered in the quarters around the election, which occurs after our

increase in cash holdings. We find firms decrease payout by 0.079% and 0.071% of assets three and four quarters before elections. This decrease in payout does occur at the same time as firms are building up pre-election cash balances. However, the magnitude of our savings effect is 13.37 times the magnitude of our payout effect. Thus, the pre-election increase in firms' cash holdings reflects value maximizing decisions by managers specific to cash holdings and is likely not an artifact of changes to pre-election investment and payout policies.

Having confirmed the main predictions of our model, we then demonstrate why changes in payout are insufficient to explain changes in aggregate savings before spikes in uncertainty. We examine relative savings around elections of three sets of subsamples of firms: small and large firms, firms with and without lines of credit, and firms with and without bond ratings. We find higher pre-election savings in small firms and firms without a line of credit or bond rating. These subsample findings are consistent with the intuition from our model, which shows that high periods of uncertainty cause firms to save more cash to avoid tapping costly external financing to pay for investment. We expect small firms will have greater need for savings before periods of high uncertainty because, on average, these firms have more investment opportunities and fewer, costlier options for external financing. Firms without lines of credit or bond ratings also face higher costs of external financing should save more before uncertain events, as well.

These subsample results, combined with the propensities of firms in these subsamples to engage in payout, shows why pre-election changes in payout cannot fully explain simultaneous changes in savings. We find, for example, small firms increase savings much more than large firms before elections, but small firms generally have no ongoing payout policy to reduce when uncertainty spikes. Rather, small firms tend to adjust their pattern of equity issuance, engaging in more frequent and larger SEOs before elections, to build up pre-election cash reserves. In contrast, we find large firms save before elections, in part, by decreasing payout. We find firms adjust several sources of cash to save before elections; changes in no one source of cash fully explains firms' savings behavior before periods of higher uncertainty. Taken together, our results demonstrate further that firms' cash savings behavior around elections is a value maximizing decision in and of itself, rather than an artifact of changes to investment or payout policies caused by high uncertainty.

The fact that our results are strongest in subsamples drives home the importance of examining an exogenous source of uncertainty. Without a truly exogenous shock to uncertainty, we would not be able to disentangle the effect of uncertainty on cash holdings from these firm characteristics correlated with cash holdings.

Our study contributes to several areas of research. Our primary contribution is to the literature on cash holdings and uncertainty. A number of papers show that firms' cash

holdings are higher in the face of different types of endogenous sources of uncertainty (e.g., aggregate uncertainty, tax uncertainty, and investment opportunity uncertainty). Our DD framework allows us to show a causal effect of uncertainty on cash holdings. We diverge from previous papers, which explore correlations in levels of uncertainty and cash,[4] by showing dynamic firm responses to changes in exogenous uncertainty and that the incentive to save outweighs the reduction in investment when uncertainty is high.

Additionally, we add to the large and growing literature on political uncertainty's effect on firms' real and financial decision making. Political uncertainty affects a number of firm financial and real decisions, including investment,[5] financing,[6] and payout[7] policies. While we focus on political uncertainty because it is exogenous, our study is important in this literature as the effect of political uncertainty on cash holdings is much larger than its effects on investment and payout. Additionally, our subsample results show the savings and equity issuance behavior of rapidly growing firms with many potential investments is highly susceptible to rising uncertainty. These findings have real consequences for how political uncertainty affects firms' growth and investment.

2. Model

In this section, we provide intuition for political uncertainty's effect on corporate savings by incorporating political uncertainty into a dynamic model of investment and saving. We begin with a description of the base model without uncertainty and then incorporate uncertainty into the model. We discuss predictions for corporate cash holdings with and without uncertainty.

[4]For example, Gao, Grinstein, and Wang (2017), Ki and Mukherjee (2016), Sánchez and Yurdagul (2013), and Duong, Nguyen, Nguyen, and Rhee (2017).

[5]See, for example, Julio and Yook (2012), Gulen and Ion (2016), Jens (2017), Bonaime, Gulen, and Ion (2017), Nguyen and Phan (2017), Chen, Cihan, Jens, and Page (2017), Atanassov et al. (2016), and Cao, Li, and Liu (2019).

[6]See for example, Jens (2017) and Çolak et al. (2017). Political uncertainty is found to increase the cost of debt by Waisman, Ye, and Zhu (2015), Liu and Zhong (2017), and Kaviani, Kryzanowski, Maleki, and Savor (2017) and the costs of debt and equity issuances by Gungoraydinoglu, Çolak, and Öztekin (2017). Ben-Nasr, Bouslimi, and Zhong (2017) show firms switch away from public debt toward bank debt in election years.

[7]Buchanan, Cao, Liljeblom, and Weihrich (2017) study how uncertainty about tax environment affects dividends and find firms are more likely to pay out dividends before expected tax increases. Huang, Wu, Yu, and Zhang (2015) examine the effects of political risk, proxied by crisis events, on dividend payers and find firms are more likely to terminate dividends and less likely to initiate dividends during periods of higher uncertainty.

2.1. The base model

Our model builds on the model described by Riddick and Whited (2009). The model is a discrete time, partial equilibrium description of the investment and financing decisions of an infinitely-lived firm. The firm chooses capital investment, cash savings, and equity issuance/dividend payment to maximize its present value to shareholders.

At the beginning of a period, the firm is in state (k, p, z), in which k is the firm's current capital stock, p is its cash holdings, and z is its productivity. Based on its capital and productivity, the firm earns pre-tax profits of $\pi(k, z)$. The profit function $\pi(\cdot)$ is increasing in k and z, and weakly concave in k. Profits are taxed at the corporate tax rate τ_c.

Between periods, the firm receives a random shock to its productivity. Productivity is persistent, so we model the productivity shock process as being AR(1) in logs:

$$\ln z' = -(1-\rho)\,\underline{\mu} + \rho \ln z + \varepsilon', \tag{1}$$

in which ρ is the autocorrelation parameter, $\varepsilon \sim N(0, \sigma^2)$, and $\underline{\mu} = \frac{1}{2}\sigma^2/(1-\rho^2)$. We use $\underline{\mu}$ so the unconditional mean of z equal to 1, which becomes important when we incorporate political uncertainty into the model.

Based on the firm's current state, it chooses its next period capital stock k'. The current capital stock depreciates by the fraction δ between periods. Current period investment is thus:

$$I = k' - (1-\delta)\,k. \tag{2}$$

When the firm invests, it faces both fixed and smooth adjustment costs, which we capture using the function:

$$A(k, k') = ck\Phi_i + \frac{a}{2}\left(\frac{I}{k}\right)^2 k, \tag{3}$$

in which c and a are constants for the fixed and smooth adjustment costs, respectively, and Φ_i is an indicator variable equal to 1 if $I \neq 0$, and zero otherwise.

In addition to choosing the next period capital stock, the firm chooses p', the next period cash holdings. By assumption, cash earns the risk-free return r, and the interest income is taxed at the firm's tax rate. Thus, for the firm to have p' next period, the firm must hold $p'/(1+(1-\tau_c)\,r)$ at the end of the current period. The firm's cash savings equation is:

$$S = \frac{p'}{1+(1-\tau_c)\,r} - p. \tag{4}$$

In this framework, cash holdings cannot be negative. The benefit of holding cash is the opportunity to avoid raising costly external capital in the future. Cash is costly to hold

because the interest is taxed, leading the after-tax return to be lower than the risk-free rate.

Once the firm has made its investment and saving decisions, it distributes any excess cash to shareholders as:

$$e\left(k,k',p,p',z\right)=\left(1-\tau_c\right)\pi\left(k,z\right)-I-A\left(k,k'\right)-S. \tag{5}$$

If $e\left(\cdot\right)$ is negative, the firm issues new equity.[8] The cost to raising external equity capital is

$$\phi\left(e\left(k,k',p,p',z\right)\right)=\Phi_e\left(-\lambda_0+\lambda_1 e\left(k,k',p,p',z\right)-\frac{1}{2}\lambda_2 e\left(k,k',p,p',z\right)^2\right), \tag{6}$$

in which each λ_i, $i=0,1,2$ measures a cost of raising external equity, and Φ_e is an indicator variable equal to 1 if the equity distribution is negative, and zero otherwise. The Bellman equation for the firm's problem is:

$$V\left(k,p,z\right)=\max_{k',p'}\left\{e\left(k,k',p,p',z\right)+\phi\left(e\left(k,k',p,p',z\right)\right)+\frac{1}{1+r}\int V\left(k',p',z'\right)dg\left(z',z\right)\right\}. \tag{7}$$

To this point, the model is the same as in Riddick and Whited (2009). As the mathematical expression of the firm's optimal saving policy is the same even after we include political uncertainty in the model, we discuss the optimal policy here. The saving policy can be found by solving the optimization problem (7) and using the envelope condition to write

$$1+\left(\lambda_1-\lambda_2 e\right)\Phi_e=\frac{1+r\left(1-\tau_c\right)}{1+r}\int\left(1+\left(\lambda_1-\lambda_2 e'\right)\Phi'_e\right)dg\left(z',z\right), \tag{8}$$

in which the left side represents the marginal cost of external financing and the right side is the shadow value of cash balances.

Eq. 8 shows that savings is related to, but not determined by, investment. Cash balances are valuable because they help firms avoid costly future external financing. External financing is necessary when the firm's internal funds are insufficient to support its investment policy, so cash balances are tied to investment. However, as equation (8) shows, the major driver of the value of cash is the probability of equity issuance, not investment directly. As a result, saving policy is a separate choice from investment policy. It is this imperfect correlation, mediated by the probability of equity issuance, that leads savings to be more sensitive to political uncertainty than is investment.

We calibrate the model using the same parameter values as in Riddick and Whited

[8]For simplicity, the model does not include a role for debt. All that is necessary to model cash savings is a wedge between internal and external costs of capital.

(2009), except we use a smaller risk-free rate (0.01) and depreciation rate (0.08) to reflect our quarterly setting. We solve the model numerically, then simulate a panel of 10,000 firms over 1,000 quarters, keeping only the last eighty quarters.

The top panel of Fig. 1 presents the cross-sectional mean of cash holdings over assets $(\frac{p}{k+p})$ for each of the eighty simulated quarters for the base model with no uncertainty. As one might expect, there is no pattern to the movements in average cash holdings, as the productivity shocks are random. The top panel in Fig. 2 plots simulated cross-sectional mean earnings, investment, equity distribution, and cash savings. Similar to cash holdings, there is no obvious pattern through time. These plots are included for comparison with simulations based on models including political uncertainty.

2.2. Political uncertainty

Government policy can have a significant impact on firms. Policies regarding taxation, regulation, and business incentives, along with the responsiveness of government bureaucracy, all affect a firm's ability to do business and its ultimate profitability. For our purposes, as long as government policy matters for firms, uncertainty about future policy matters.

We model government policy as coming from one of two political regimes.[9] The political regime, R, has either high favorability for the firm, H, or low favorability, L. The political regime affects the firm's profitability through the productivity shock process. The firm's productivity shocks tend to be higher when the political regime is favorable. We thus introduce a new productivity shock process, adjusting (1) so it includes political regimes:

$$\ln z' = (1-\rho)\left(\mu_R - \underline{\mu}\right) + \rho \ln z + \varepsilon', \tag{9}$$

in which μ_R is the trend in productivity from being in political regime R. We assume $\mu_L = -\mu_H$, which causes the percentage effect of each political regime to be the same. For example, if a favorable political regime increases productivity by 5%, then an unfavorable one decreases productivity by 5%. We use this symmetry of impact so that our predictions are not an artifact of a bias towards either regime.

Introducing political uncertainty into this model as a potential shift in future regime induces a firm to change its savings behavior by changing the firm's expected future financing costs. Political uncertainty is the firm's lack of knowledge about the future political regime. Effectively, political uncertainty is the result of randomness in how a firm switches between

[9] We use two regimes for simplicity. At any time, the political regime may be more or less favorable for a given firm. For comparison, Pástor and Veronesi (2012) and Pástor and Veronesi (2013) model political regimes as random outcomes from a continuous distribution.

favorable and unfavorable regimes over time. The inclusion of political uncertainty into the description of cash holdings policy in Eq. 8 affects the shadow value of cash balances because the possibility of a regime change shifts the expected future external equity cost.

If political uncertainty is incorporated into the model in this way, the average cross-sectional response to uncertainty is an increase in cash holdings, even though not all firms face the same possible regime shifts. A firm currently in an unfavorable regime knows that a switch to the favorable regime is a positive shock to its investment opportunities. An increase in investment requires more financial resources, increasing the likelihood that the firm needs external financing, which in turn increases the shadow value of cash holdings. Thus, firms in an unfavorable regime hold more cash in advance of a possible regime change to avoid the need for external financing because increasing cash holdings is inexpensive compared to paying external financing costs if the regime switch does occur. If a firm is currently in a favorable regime and faces a possible switch to an unfavorable regime, it decreases cash holdings, but not as much as a firm facing the opposite switch increases cash holdings. As long as there is a chance a firm remains in a favorable regime, it retains some cash in case the regime switch does not occur because a firm remaining in the favorable regime without sufficient cash balances would be forced to tap costly external financing. This asymmetry results in an average increase in firm cash balances, but the timing and magnitude of the increase depends on the type of political uncertainty incorporated into the model.

In the U.S., gubernatorial election timing is known in advance, so firms are aware when a regime change is possible and when the uncertainty is resolved. Following Jens (2017), our main empirical specification uses gubernatorial elections as the source of political uncertainty. In almost every U.S. state in our sample, gubernatorial elections occur in November of every fourth year.[10] Firms operating in that state know when elections are held and can make plans based on the election calendar. We model predictable political uncertainty based on the election cycle.

We model an N-period election cycle. The election is known to occur in period N. In period $n < N$, the next period, $n' = n + 1$, political regime is known to be the same as the current political regime, i.e. $R' = R$. In the N^{th} period, an election is held. With probability γ the political regime is unchanged by the election; for example, the incumbent governor

[10]New Hampshire and Vermont hold gubernatorial elections every other year. Rhode Island switched from two-year terms to four-year terms during the sample period. Louisiana has unique two-round gubernatorial elections in which there is a "jungle" primary, followed by a run-off election between the two top candidates if no candidate wins a simple majority of the vote in the initial election. The primary and run-off elections are held in the 4^{th} quarter of the year (in October and November, respectively), so the timing described in the model is appropriate for Louisiana.

remains in office. We can express the probability of a change in political regime as

$$P\left(R'=R|n\right)=\begin{cases}1 & \text{if } n<N,\\ \gamma & \text{if } n=N.\end{cases} \tag{10}$$

Following the election, the cycle begins again with $n=1$.

We calibrate the model using the same parameter values as in Riddick and Whited (2009), except we use a smaller risk-free rate (0.01) and depreciation rate (0.08) to reflect our quarterly setting. We calibrate the productivity regime returns as $\mu_H=-\mu_L=0.05$.[11] We use a quarterly election cycle with $N=16$, and $\gamma=0.90$, as incumbents win re-election approximately 90% of the time. We solve the model numerically, then simulate a panel of 10,000 firms over 1,000 quarters, keeping only the last eighty quarters.

The bottom panel of Fig. 1 presents the cross-sectional mean of cash holdings over assets $(\frac{p}{k+p})$ for each of the eighty simulated quarters for the model with predictable uncertainty. The vertical lines mark the first quarter after each election ($n=1$), which corresponds to the fourth quarter in the data, as U.S. gubernatorial elections are held in November. For comparison, the gray dot-dash line repeats the average cash holdings over assets for the no uncertainty case, which is plotted in the top panel. Although, on average, there are similar cash holdings between the no uncertainty (dot-dash line) and predictable uncertainty (solid line) simulations, there is an obvious increase in cash holdings in the quarters before an election for the predictable uncertainty average cash holding. Once the election occurs, there is a sharp decrease in cash holdings, as the next uncertainty event is not imminent and firms no longer need to retain precautionary cash holdings.

The predictable uncertainty causes a strong incentive for firms to increase cash holdings. In the no uncertainty simulation line, cash holdings decrease when a firm receives a negative productivity shock. Right before elections, even if the no uncertainty line is trending downward, the predictable uncertainty line moves upward. We use the same productivity shocks in each simulation, so the simulations moving against each other means that when the productivity shock alone would cause a decrease in cash holdings, firms facing uncertainty build up cash balances.

One possible explanation for the movement in cash holdings is a decrease in pre-election investment. Julio and Yook (2012), among others, show political uncertainty causes firms to decrease investment. If firms decrease investment but do not increase their payout to shareholders, then cash holdings mechanically increase. Theoretically, our model suggests cash holdings are more responsive to changes in uncertainty than investment, and we test

[11] We use a value of 0.05 as it is large enough to illustrate the effect of political uncertainty cleanly. The size of the simulated response scales up with the value of μ_H.

whether cash is more responsive to uncertainty than is investment directly in our empirical work. To motivate these tests, the bottom panel in Fig. 2 plots simulated cross-sectional mean earnings, investment, equity distribution, and cash savings, with the vertical line representing the first quarter after the election. There is a slight decrease in investment prior to the election, but the increase in cash savings is larger then the decrease in investment. Simulated firms decrease their payout to shareholders along with investment in advance of the election, despite no change to average earnings. In our simulations, cash responds more to uncertainty than investment, which shows that the increase in cash holdings is not simply an artifact of the investment effect but is itself a value-maximizing decision that is made in addition to the decision to decrease investment.

The simulations in Figs. 1 and 2 motivate several major predictions for our tests. First, firms facing political uncertainty should hold more cash than firms not facing political uncertainty, and their cash holdings should decrease after the uncertainty is resolved. Additionally, the change in cash holdings should be larger in magnitude than the change in investment. Finally, payout should decrease in advance of elections and subsequently increase after uncertainty is resolved, and the change in cash holdings should be larger in magnitude than the change in payout.

3. Data and variables

3.1. Political and macroeconomic variables

To measure predictable political uncertainty, we use gubernatorial elections. We obtain gubernatorial election data from Congressional Quarterly (CQ) Press. Firms are linked to gubernatorial elections by their states of headquarters reported in the Compustat Annual files.

Our final sample includes 385 elections held from 1987 to 2016. The beginning of our sample is limited by the availability of firms' quarterly cash holdings data before 1987. We include all regularly-scheduled gubernatorial elections in our sample, omitting special and recall elections in California (2003), Utah (2010), West Virginia (2011), and Wisconsin (2012).[12] One key aspect of our study is examining pre-election cash holdings. Special and recall elections are less predictable than regularly-scheduled elections, so they are omitted from the sample. We define *election* as a binary variable equal to one if a state held a gubernatorial election in a year.[13] Approximately 25% of state-years are election years.

[12]See the Appendix of Chen et al. (2017) for a discussion of the individual circumstances for each of these special elections.

[13]Variable names are italicized throughout the paper.

We include two macroeconomic controls in our estimation: *recession* and *unemp*. Jens (2017) discusses the correlation between political and macroeconomic uncertainty and demonstrates the importance of controlling for state and national macroeconomic conditions. *Recession* is a binary variable equal to one if a quarter is within a National Bureau of Economic Research (NBER)-defined recession and zero otherwise. *Unemp* is quarterly state unemployment, which we measure as the average of monthly state unemployment, and is from the Bureau of Labor Statistics (BLS). Table 1 provides summary statistics for these variables.

3.2. Cash savings, holdings, and firm-level controls

We obtain firm financial data from Compustat from 1987 to 2016. Our sample starts in 1987 because we omit financial firms and regulated utilities from our sample, and there are only a handful of firms outside of those industries with available data on cash holdings prior to 1987. We limit our sample to firms headquartered in the United States, but omit firms headquartered in the District of Columbia from the sample, as the District of Columbia does not have a governor. We also limit our sample to firms with fiscal year-end in December because of annual cyclicality in firm savings (Fig. 3).[14] Approximately 355,000 quarterly firm observations can be matched to states and election data.

Table 1 presents summary statistics for our dependent variables and controls. We follow Riddick and Whited (2009) in measuring our main dependent variable, cash holdings, as cash scaled by total assets. The average holdings for our sample is 21% of assets (median of 9%). We also examine sources and uses of cash using measures of *savings* (change in cash scaled by total assets), *investment* (capital expenditures scaled by total assets), and *payout* (the sum of stock repurchases and dividends scaled by total assets) as dependent variables.

The empirical setups in Bates, Kahle, and Stulz (2009) and Faulkender, Hankins, and Petersen (2017) inform our choice of firm control variables. We include in our main regressions measures of firm *size* (the log of total assets adjusted for cash), *leverage* (the sum of long-term and short-term debt, scaled by assets), *ROA* (operating income before depreciation scaled by assets), *market-to-book* ratio (the sum of market value of equity, long-term debt, and short-term debt divided by total assets), *working capital* (current assets minus current liabilities and cash divided by total assets), and a binary variable equal to one if a firm has a *bond rating* in a quarter. Summary statistics for these variables are also given in Table 1. Missing data limits the sample size for our estimations to approximately 236,000 firm-quarter observations.

[14]For further discussion of the importance of limiting the sample to year-end in December in a difference-in-difference setup, see Jens (2017).

4. Regression framework

To measure the effects of predictable political uncertainty on firm cash holdings, we use a difference-in-difference (DD) framework. Our estimation exploits the exogenous nature of elections to determine a causal effect of political uncertainty on firms' cash holdings. We examine pre- and post-election holdings to show how firms adjust cash in advance of and following elections.

There are a number of assumptions that must hold for a DD setup using gubernatorial elections as a treatment to establish a causal effect. Jens (2017) discusses the validity of several of these assumptions—the timing of elections cannot be manipulated, firms do not self-select into different election cycles, gubernatorial elections are more important to state policies than state legislature elections, etc.—that are relevant to any paper using the estimation technique. We focus here on determining whether the parallel trends assumption, which is sample specific, is valid for our setting.

In a parallel trends test, the goal is to observe no differences in trends between the treatment and control samples until the event occurs, whereupon there is a clear change in the treatment group and not the control group. Based on our simulations, we expect firms begin to build up cash in advance of the spike in uncertainty accompanying gubernatorial elections. After the uncertainty is resolved, firms draw down these cash balances. The results in Jens (2017) show that the political uncertainty affects firm investment as early as Q2 of election years, providing a timeline for our beliefs on when uncertainty before gubernatorial elections spikes. We expect to see an increase in cash balances before Q2 of election years, including in Q1 of election years and the second half of the year before elections. Elections occur in the fourth quarter, so we expect to see a decline in cash balances in the first quarters of the year following the elections. Whereas all uncertainty is resolved on date of the election in our simulations, Jens (2017) also shows uncertainty can last up to one or two quarters into the year following the election. We expect firms to draw down cash balances after uncertainty resolves; lower cash balances should exist for several quarters into the year following the election as firms react to lower levels and the resolution of uncertainty. Based on these expectations, we determine firms in the years before, years of, and years after gubernatorial elections are treated firms. We use firms not in these cycle years as control firms, so, for example, for the year before the election sample, controls firms are firms in years of, years after, and two years after elections.[15] Because gubernatorial elections are not held in all states simultaneously, firms cycle in and out of the control groups over the course

[15] All states in the sample except New Hampshire and Vermont elect governors every two years, so thinking of election cycles as four year cycles is appropriate for the majority of firms in the sample.

of the sample.

Fig. 3 shows a formal parallel trends test for this DD estimation. The solid blue line and dashed red line plot the average quarterly cash holdings for firms in the treated and control group, respectively. Error bars shown are 95% confidence intervals around estimates. A comparison of the treated and control samples in Fig. 3 demonstrates the validity of the parallel trends assumption for our setting and provides support for our model predictions. Five to seven quarters before the election, average cash holdings of treated and control firms move very closely with each other. Four quarters before the election, the average cash holdings of treated firms spike. Although, generally, cash holdings are higher in fourth quarters, the average cash balances in the fourth quarter of the years before elections are unusually high. The difference between the cash holdings of the treated and control group do not statistically differ, but the sharp rise in cash in treated firms is as is described in our model. Immediately following the election quarter, the average cash holdings of treated firms drops and is statistically lower than the holdings of control firms. By the end of the year following the election, the cash holdings of treated firms and control firms are indistinguishable. The movement in the cash holdings of treated firms, relative to the cash holdings of control firms, in Fig. 3 suggests that the higher uncertainty accompanying elections induces firms to manage their cash balances; outside of the higher uncertainty period, treatment and control firms behavior similarly in terms of cash management.

The goal of this paper is to examine the effects of political uncertainty on cash holdings, so we focus here on the parallel trend assumption for corporate cash holdings. However, as part of our analysis, we explore the effects of political uncertainty on different dependent variables, including investment, payout, and savings. Formal parallel trends plots for these variables are available in our Internet Appendix. These plots show the parallel trends assumption in valid in each of these settings.

To formally estimate the effects of predictable political uncertainty on firm cash holdings, we estimate a series of models. The specification to estimate an effect four quarters before an election is:

$$\begin{aligned} Cash_{i,t,q} = \beta_0 + \beta_1 yearbefore_{i,t} \times Q4 + \beta_2 yearbefore_{i,t} + \beta_3 Q4 + \\ \beta_4 election_{i,t} + \beta_5 yearafter_{i,t} + \delta controls_{i,t,q} + \sigma_{i,t,q}, \end{aligned} \tag{11}$$

for firm i in quarter q and year t, where *election* is a binary variable equal to one if there is an election in the state of headquarters of firm in a year and zero otherwise. *Yearafter* and *yearbefore* are binary variables equal to one for observations in the year before or year after elections, respectively.

The coefficient of interest is on the interaction term. The coefficient on *yearbefore* cap-

tures any pre-existing differences between the treated (firms headquartered in states with gubernatorial elections in the following year) and control (firms headquartered in states without upcoming elections) groups. The coefficient on *Q4* captures any variation in firms' cash holdings related to the fourth quarter. The coefficient on the interaction term, β_1, then captures the pre-election effect on firms' cash holdings in that quarter.

A number of additional controls are also included in each estimation. We discuss our macroeconomic and firm controls in the data and variables section. We include quarter indicator variables as control variables because of the annual cyclicality apparent in firms' cash holdings (Fig. 3). We also include year, state, and industry fixed effects in each estimation, as well as a binary indicator variable equal to one if a presidential election was held in the year and interactions between the presidential election variable and quarters. We follow the recommendation in Bertrand, Duflo, and Mullainathan (2004) to cluster standard errors by state.

We use a similar model to estimate effects during the election year, which include Q1 through Q3, the three quarters leading up to the election, and Q4, in the election quarter. For example, for Q1 of elections years for firm i in quarter q and year t,

$$\begin{aligned} Cash_{i,t,q} = \beta_0 + \beta_1 election_{i,t} \times Q1 + \beta_2 yearbefore_{i,t} + \beta_3 Q1 + \\ \beta_4 election_{i,t} + \beta_5 yearafter_{i,t} + \delta controls_{i,t,q} + \sigma_{i,t,q}. \end{aligned} \tag{12}$$

Again, the coefficient of interest, β_1, is on the interaction term. We vary the quarter used in the interaction term, *election* $\times$ *Q2*, *election* $\times$ *Q3*, and *election* $\times$ *Q4*, to estimate each quarter's effects.

Finally, for Q1 of the year after the election for firm i in quarter q and year t, we estimate:

$$\begin{aligned} Cash_{i,t,q} = \beta_0 + \beta_1 yearafter_{i,t} \times Q1 + \beta_2 yearbefore_{i,t} + \beta_3 Q1 + \\ \beta_4 election_{i,t} + \beta_5 yearafter_{i,t} + \delta controls_{i,t,q} + \sigma_{i,t,q}. \end{aligned} \tag{13}$$

We again vary the quarter used in the interaction term, including in turn: *yearafter* $\times$ *Q2*, *yearafter* $\times$ *Q3*, and *yearafter* $\times$ *Q4*. By varying the quarter and cycle year used in the interaction term, we are able to capture effects for four quarters before, four quarters after, and the quarter of the election.

Our goal is to capture changes in firm behavior caused by gubernatorial elections, but other elections can cause competing sources of uncertainty.[16] The biggest source of cyclical political uncertainty in the U.S. is arguably the presidential election cycle. As gubernatorial

[16]See Jens (2017) for a discussion of why gubernatorial elections are the only state-level elections relevant to this setup.

elections are held in every year, we are able to identify effects separately for each election cycle to ensure our results are not driven solely by presidential elections. To control for uncertainty related to presidential elections, we include in each estimation a binary variable equal to one if a presidential election occurred in a year, as well as interactions between the presidential election variable and quarter indicator variables.

It is unlikely our results are driven by any other cyclical elections in the U.S. For example, one-third of the U.S. Senate is up for re-election every even year, and Senators from the same state have different term cycles.[17] This means that for two out of every three consecutive even years, a state has an election to replace a U.S. Senator. Thus, some states with a gubernatorial election also hold a Senate election, but others do not. For Senate elections to drive our results, Senate elections would only matter to the cash holdings of firms in a state if there was also a gubernatorial election. In this scenario, at most one Senate election cycle would matter to firms in a state (with no plausible reason why the other Senator's election shouldn't matter to firms' cash holdings), and the effect would need to be unrelated to the gubernatorial elections themselves. This setup is difficult to believe. Furthermore, since there are both odd and even year gubernatorial elections, Senate elections cannot drive similar effects in all gubernatorial election cycles.

It is even more unlikely our results are driven by elections for the U.S. House of Representatives. Every even-numbered year, the entire House is up for re-election.[18] Because gubernatorial elections are held every four years (with the exception of New Hampshire and Vermont which are responsible for very few firms in our data set), if House elections are driving our results, it would mean that House elections affect state-level investment on a rotating basis that happens to line up with, but is completely unrelated to, the gubernatorial election cycle. For example, Texas is electing a governor in 2018 and Washington elected a governor in 2016. For House elections to drive our results, the House elections would have to alternate between affecting the cash holdings of firms headquartered in Texas in 2018, but not 2016, and firms headquartered in Washington in 2016, but not 2018. This story of House elections having alternating effects on firm behavior that coincidentally lines up with gubernatorial election cycles is far-fetched. Similarly to Senate elections, House elections are only held in even-numbered years and cannot explain results in the two odd-numbered years gubernatorial cycles.

[17] U.S. Constitution, Article 1, Section 3.
[18] U.S. Constitution, Article 1, Section 2.

5. Results

5.1. Political uncertainty and cash holdings

In Table 2, we test whether firms headquartered in election states have statistically different cash balances than firms in non-election states using the regression framework from Section 4. The dependent variable for the estimation is cash scaled by total assets and is multiplied by 100 for ease in interpreting the coefficients. For the -4 quarter regression (Q4 of the year before elections) in column 1, we estimate a coefficient on $yearbefore \times Q4$ of 0.432, meaning firms headquartered in states about to elect governors hold 0.432% more cash as a percentage of assets than firms headquartered in states without upcoming elections. Using the average cash holdings of 22% as a baseline, this constitutes a 1.96% increase in cash holdings before elections.

The results in Table 2 show firms build up cash balances before spikes in uncertainty before drawing them down as uncertainty resolves. We find that cash balances of election-state firms are statistically higher than cash balances of non-election state firms before elections. The magnitude of the differences between election and non-election state cash balances is high—1.96%, 1.34%, and 1.13% higher in the two to four quarters before elections, respectively. In the election quarter, as uncertainty is resolved, firms begin to draw down their cash balances. Lower cash balances in treated firms, firms headquartered in states that just elected a new governor, continue through the first and second quarters of the year after the election. The economic magnitude of these estimates is also large—election-state firms have cash balances 1.86%, 1.96%, and 1.48% of assets lower than non-election state firms in the quarters of and following elections. By Q3 and Q4 of the year after the election, firms begin to rebuild their cash balances and again hold more cash relative to non-treated firms. The timing of the buildup in cash coincides with the results in Jens (2017), which show firms begin to ramp up investment in Q3 and Q4 of the years following elections. In subsequent tests, we examine investment to provide a fuller look at the interplay between firms' financial and real decisions around spikes in political uncertainty.

These results are consistent with our first model prediction about firm cash holdings around periods of higher uncertainty (Fig. 1), that firms will build up cash before drawing it down. A second important prediction of our model is that this build up and draw down will not be an artifact of changes to firm investment or payout caused by uncertainty. While uncertainty may affect firm investment and payout, we predict in Fig. 2 that savings, or changes in cash holdings, will be greater than any changes to investment and payout.

In Table 3, we directly test this prediction by examining changes to savings (Panel A), investment (Panel B), and payout (Panel C) caused by gubernatorial elections. Again,

dependent variables are multiplied by 100 for ease in interpreting coefficients. Because the dependent variables are flows, we lag the following control variables included in the estimations: *leverage*, *size*, *market-to-book*, and *working capital*. Additionally, we include *ROA* and *bond rating* in all specifications. Finally, in the regression in which *payout* is a dependent variable, we include *capital expenditures* as a control.

The results in Panel A of Table 3 show that firms' cash savings are higher in election-state firms, compared to non-election state firms, as far as four quarters ahead of elections. We measure significantly higher savings in election-year firms three and four quarters before elections relative to non-election-year firms. From -4 to -2 quarters before the election, there is cumulative savings of 2.19% of assets in election-year firms.[19] Economically, the effect is large; the average quarterly change in cash relative to assets in the sample is about 1%. Thus, we estimate that firms save over an additional quarter's worth of cash, on average, in the quarters leading up to gubernatorial elections. In the quarters around the election, when political uncertainty is high, firms begin to dissave. Dissavings in the quarter before the election is consistent with the results in Table 2 showing significantly lower cash holdings in the quarter of the election. Four quarters following the election, firms in states that just elected a governor save 1.078% of assets more than firms headquartered in states that did not just elect a governor.

In Panel B of Table 3, we show that, while political uncertainty caused by elections affects investment, the timing and magnitude of changes in investment make it unlikely that investment drives our cash results. Echoing the results in Jens (2017), investment of election-state firms is significantly lower than investment of non-election-state firms the quarter before and quarter of elections. Lower investment persists two quarters following elections before rebounding. For the increase in cash balances to be a consequence of the decline in investment, decreases in investment would have to occur as early as four quarters before elections. Instead, we see a slight uptick in investment coinciding with higher cash balances at the start of election years. Thus, lower investment cannot explain the results seen in Table 2. Finally, we find a post-election bounceback in investment in Q4 of post-election years, directly coinciding with firms building cash back up post-election seen in Table 2.

Results in panel C of Table 3 show that firms adjust equity payouts ahead of elections but that declines in payout are not sufficient to cause all of firms' pre-election cash buildups. We find a decrease in payout two to four quarters ahead of elections, which is consistent with payout contributing to an increase in firm cash holdings during that time. However, the magnitude of the payout result is dwarfed by the savings result—four quarters before the election, the increase in cash savings is 13.37 times the decline in payout. Thus, while a

[19] Calculated as: $(1 + 1.056\%) \times (1 + 0.651\%) \times (1 + 0.464\%) - 1$.

decline in payout may contribute to the increase in pre-election firm cash holdings, there is more to the story than changes in payout.

A key conclusion of our empirical tests is that changes in cash holdings cannot be mechanically explained by changes to firm investment and payout policies, which are also expected to change when uncertainty spikes. To further illustrate this conclusion, we plot the coefficients estimates from Table 3 in Fig. 4 to visually show the differences in magnitude between the effects estimated for savings, investment, and payout. Savings coefficients are plotted in green diamonds, investment in blue boxes, and payout in red circles. As predicted by our model, uncertainty does affect investment and payout. Investment declines when uncertainty is high, in the quarters around the election, which is indicated by a black vertical line. Payout declines before the spike in uncertainty and can explain a small piece of the savings and increase in cash holdings before elections. However, as Fig. 4 makes clear, firm savings around elections is driven by more than just this change in payout. Firms are electing to build up cash balances more than can be explained by the change in payout.

5.2. Political uncertainty and savings

In this section, we demonstrate why changes in firms' payout is insufficient to explain the changes in firms' savings around elections and on which other sources of financing firms rely when political uncertainty spikes. We focus here on payout because the mismatch in timing between changes to cash holdings and investment before elections means that cash saved by decreasing investment occurs too close to the election to explain the pre-election build-up in cash holdings. Our model shows high uncertainty induces firms to save to avoid tapping costly external financing to pay for investment. Firms differ in levels of investment and available sources of financing so some need to save more than others before spikes in uncertainty. Additionally, some firms are particularly susceptible to political uncertainty measured with gubernatorial elections. We find that firms that are the least likely to engage in payout are the most affected by our measure of political uncertainty, meaning that these firms finance their pre-election cash buildup with sources other than decreased payout. We show no one source of changes in cash fully explains the aggregate movement in firm cash holdings.

To demonstrate how political uncertainty affects firms disparately, we focus on three sets of subsamples: small and large firms, firms with and without bond ratings, and firms with and without lines of credit. This is not an exhaustive list of subsamples of firms affected differently by political uncertainty, and there will be overlap in samples because of correlation between these attributes. However, these subsamples are sufficient to demonstrate how differences

in firm characteristics and susceptibility to uncertainty affects the magnitude and source of firms' savings.

First, we compare the effects of political uncertainty on savings behavior of small and large firms. Jens (2017) shows small firms are more susceptible to political uncertainty measured with gubernatorial elections. Small firms are more likely than large firms to be geographically concentrated in their state of headquarters (Jens, 2017), so political uncertainty in the state of headquarters is a more relevant source of uncertainty for small firms than large firms. Small firms also tend to have more available investment opportunities and limited available external funding opportunities. Based on our model intuition, these attributes make firms more likely to engage in savings before spikes in uncertainty.

Additionally, we compare changes in savings of firms with and without bond ratings or lines of credit. The intuition motivating the examination of these two sets of subsamples is similar. Firms that have lines of credit available should not need to build up as big a cash balance before high uncertainty periods as, on average, lines of credit can provide cash if a shortfall occurs. Firms without bond ratings have one fewer source of external cash available to them or relatively higher cost of debt, and so should be more likely to save cash before high uncertainty periods. Thus, we expect to see more savings in firms without lines of credit or bond ratings before elections.

Results in Table 4 show the effects of cash savings on political uncertainty are stronger in hypothesized subsamples. We re-estimate the cash savings result from Panel A of Table 3 in: small and large firms (Panel A), firms with and without bond ratings (Panel B), and firms with and without lines of credit (Panel C). We define small and large firms as firms in the smallest and largest tercile, respectively, of market capitalization in each year. Four quarters before elections, small firms save an additional 1.094% of assets in election states relative to firms in non-election states. This boost in savings increases to 1.5% of assets three quarters before the election. Higher savings in election states relative to non-election states continues into Q2 of the election year, or two quarters before the election. Starting in the quarter of the election, as uncertainty begins to resolve, small firms headquartered in election states have lower savings than small firms in non-election states. Consistent with our prediction that large firms' savings should be less sensitive to political uncertainty than small firms' savings, large firms in election states begin to save cash one quarter later than small firms, in Q1 of the election year. We estimate cash savings of election-state large firms is 0.178% larger than the savings of non-election-state large firms. This estimate has a t-statistic of just over 1.4, so it is not statistically significant at the 90% level, but is suggestive that large firms engage in some pre-election savings. However, the estimated increase in savings of small firms three quarters before elections is about 8.5 times the increase in savings of

large firms. As expected, the savings of small firms is more strongly affected by political uncertainty than the savings of large firms.

In Panel B of Table 4, we show there is no evidence of pre-election savings in firms with lines of credit. We expect firms with lines of credit will show less evidence of a build-up in cash before spikes in uncertainty because, rather than turn to costly external financing if additional funds are needed, these firms can draw down their lines of credit. Consistent with this prediction, there is no evidence of higher cash savings in firms with lines of credit headquartered in election states relative to savings in comparable firms in non-election states. Our source of data for lines of credit is Dealscan, which does not include all firms in our sample, so we present results for firms without lines of credit for firms both listed and not listed in Dealscan. In both samples, we find a pre-election increase and then decrease in savings that is as expected and consistent with earlier results. Because these firms do not have a line of credit as a potential source of cash, these firms are more likely to increase savings pre-election, as our model predicts, to avoid having to use costly external financing.

In Panel C of Table 4, we examine savings of firms with and without bond ratings around elections. We find an increase in savings before uncertainty spikes and a decrease in savings as uncertainty resolves in both samples. However, the buildup in savings is smaller and begins closer to the election for firms with bond ratings. Additionally, the decrease in savings for firms with bond ratings is smaller than for firms without ratings. These results are consistent with our expectations that firms without ratings, which have higher costs of external financing than firms with bond ratings, are more likely to save before spikes in uncertainty.

Combined with the results in Table 4, the summary statistics in Table 5 provide intuition for why pre-election changes in payout cannot fully explain pre-election changes in firms' savings in tests in Table 3, which are estimated on our whole sample. In the first two columns of Table 5, we provide the average of a binary variable equal to one if there is positive payout (the sum of dividends and repurchases) or an SEO in a quarter, respectively, for a sample. The final column presents the average size of an SEO scaled by total assets. We identify SEOs as occurring when sale of stock as a percentage of total assets is greater than 5%. Thus, the minimum size of SEO/Assets in the final column is 5%. The binary SEO variable is equal to one if sale of stock as a percentage of assets is greater than 5%.

In panel A of Table 5, we compare these summary statistics for small and large firms. There is only positive payout in 6.84% of small-firm quarters, whereas 52.38% of large-firm quarters have positive payout. Small firms are nearly eight times more likely than large firms to have an SEO in a quarter. Additionally, when a small firm has an SEO, the firm raises 42.61% of assets, while large firms raise only 14.22% of assets. Thus, small firms, which

increase savings more before spikes in uncertainty (Table 4), engage in less frequent payout and more frequent equity issuances than large firms. Because small firms engage in payout so infrequently, a decrease in payout cannot provide all of small firms' pre-election savings. Small firms must save cash from other sources as well.

Results in panels B and C of Table 5 provide the same intuition as results in Panel A. Firms more affected by political uncertainty—firms without lines of credit and bond ratings, as shown in Table 4—are less likely to engage in payout and more likely to issue equity during the sample period. Additionally, when these firms do issue equity, the size of their SEOs, measured as a percentage of assets, are greater than the size of SEOs of firms with lines of credit and bond ratings. Again, the summary statistics in Table 5 show that firms more likely to engage in savings before spikes in uncertainty are less likely to have payout available to reduce as a source of cash, which explains why changes in payout do not fully explain pre-election movements in cash.

In Table 6, we estimate changes in payout around elections for the same set of subsamples. The dependent variable is quarterly payout, the sum of dividends and buybacks, scaled by total assets. Results in Table 6 show firms that are more likely to engage in payout (Table 5) are also more likely to adjust payout around elections. Two quarters before the election, large firms decrease payout by 0.022%, relative to large firms headquartered in non-election states. As uncertainty resolves in the quarter of the election and quarter following the election, large firms increase payout by 0.014% and 0.023%, respectively. Although the magnitudes of these estimates are modest, these results show large firms' cash savings behavior are affected by political uncertainty. Payout of firms without lines of credit headquartered in election states is 0.015% lower than payout of similar firms in non-election states. With a t-statistic of 1.67, the estimate is just shy of being statistically significant at the 10% level. Like large firms, firms with lines of credit increase payout the quarter of and after elections. Payout in firms without bond ratings decreases two quarters before the election, increases as uncertainty resolves in the quarter of the election, subsequently decreases again three quarters following the election. Additionally, large firms and firms with lines of credit show a modest, marginally significant decline in payout three and four quarters after the election, which coincides with the increase in investment following elections (Table 3). In contrast, there is no significant movement in payout for firms less likely to engage in payout in Table 5, small firms and firms without lines of credit or bond ratings.

Although studies show a strong inverse relation between uncertainty and payout (Chay and Suh, 2009; Walkup, 2016; Lee et al., 2015), pre-election savings does not seem to be sourced entirely from decreased payout, even among firms with payout available to decrease and provide cash. However, because the magnitude of changes in savings for firms engaging

in payout tend to be modest, it is difficult to make formal statistical comparisons. For example, in large firms, we find a statistically significant decline in payout in Table 6, and a larger, but statistically insignificant, increase in savings in Table 4 in the quarter before the decline in payout. Changes in payout is likely a component of changes in cash, but these two numbers are statistically indistinguishable. The evidence that payout is significantly smaller than total cash savings is clearer in firms without bond ratings, which have an increase of 0.234% (t-statistic of 2.49) in savings and a simultaneous decrease of 0.033% (t-statistic of 4.13) in payout. In untabulated results, we examine changes to large firms' short-term investments, like commercial paper, and find evidence of increases in short-term investments before uncertainty spikes and declines in such investments as uncertainty resolves. In general, results show that large firms, which are less affected by high uncertainty, modestly increase cash balances through a number of sources, including decreasing payout and increasing short-term investments.

In Table 7, we examine changes to another source of cash, sales of stock, around elections. The dependent variable for these tests is sale of stock as a percentage of total assets. We see an increase in the magnitude of stock sales in firms in election states relative to non-election states before uncertainty spikes in all subsamples. However, the increases are largest in small firms and firms without lines of credit or bond ratings, as expected. The average increase in SEO size in small firms three quarters before the election is 1.504%. Relative to the average SEO size for small firms in Table 5 of 42.61% of assets, this estimate constitutes a 3.52% decrease in the size of SEOs caused by the expected increase in uncertainty. In general, we observe an increase in the size of stock sales two to four quarters before the election, a decrease in size in the three to four quarters around the election, coinciding with the period of highest uncertainty, and then, in some subsamples, an increase thereafter.

In Table 8, we examine a linear probability model, examining changes to a binary SEO variable equal to one if a firm has an SEO in a quarter and zero otherwise around elections. Again, we see an increase in issuance activity in all samples two to four quarters before the election, followed by a decrease in the three to four quarters directly surrounding the election. Small firms headquartered in election states engage in, on average, 2.389% fewer SEOs than comparable firms in non-election states in Q1 of election years. Relative to the average number of small-firm quarters with SEOs in Table 5, 16.52, this constitutes nearly a 14.5% decline in the number of SEOs for these firms. We see similar statistically and economically significant declines in SEO activity in firms without bond ratings or lines of credit. The results in Tables 7 and 8 show that, particularly for firms that are unlikely to have an ongoing payout policy and more likely to engage in SEOs, adjusting the timing and size of SEOs is a source of savings around high uncertainty periods.

Based on our model expectations and firm characteristics, it is not surprising that small firms greatly adjust their issuance activity around periods of higher uncertainty. Small firms tend to have many investment but limited funding opportunities. Many rely on SEOs to fund operational activities, as well. Firms without bond ratings or lines of credit are similarly constrained in sources of external financing. DeAngelo, DeAngelo, and Stulz (2010) show that 62.6% of firms that have engaged in an SEO would have run out of cash within the year and 81.1% of these firms would have had subnormal cash balances. Our results, combined with those in DeAngelo et al. (2010), suggest that firms that are dependent on issuances still engage in issuances during election years but shift issuances away from spikes in political uncertainty, thereby creating a cash balance they can subsequently draw down when uncertainty is high.

Incentives to shift equity issuances away from spikes in uncertainty are likely reinforced by changing costs of equity. Political uncertainty has been shown to increase cost of debt (Waisman et al., 2015; Liu and Zhong, 2017; Kaviani et al., 2017) and costs of debt and equity issuances (Gungoraydinoglu et al., 2017). Our model does not explicitly incorporate rising costs of external financing related to higher uncertainty. However, were we to include an increase in cost of external financing coinciding with high uncertainty, the direction of all of our predictions would remain unchanged; only the strength of predictions would be affected in this alternate model.

These results demonstrate an important aspect of how political uncertainty affects firms. Higher periods of uncertainty disproportionately affect the savings behavior of small firms and firms with fewer external sources of cash. Because these firms are constrained in their sources of financing, higher uncertainty also affects the size and timing of these firms' equity issuances. These results suggest rising uncertainty and frequent spikes in uncertainty can alter the behavior of rapidly growing firms and firms with many potential investments, which can have real consequences for growth and investment, broadly.

5.3. Robustness

5.3.1. Firms with foreign income

In Table 9, we split our sample into firms with and without foreign income. We expect any changes in cash holdings to be stronger for firms without foreign income, as these firms should be particularly susceptible to political uncertainty caused by U.S. elections. Consistent with this prediction, generally, there is no evidence of precautionary savings in firms with foreign income. However, the cash holdings of firms without foreign income increase before elections and decline as uncertainty is resolved.

This test is important given the results in Faulkender et al. (2017), who show asymmetric tax policies in the U.S. and foreign countries explain, in part, the increase in multinational firms' cash balances over the last few decades. By limiting our sample to firms headquartered in the U.S. without foreign income, we demonstrate our results are robust to the effects Faulkender et al. (2017) explore.

5.3.2. Placebo results

A potential concern with our DD framework is that a spurious event coinciding with gubernatorial elections could be driving our results. At least to some extent, the fact that there are four distinct gubernatorial election cycles with at least some elections occurring every year should mitigate this concern. However, we also estimate a placebo test demonstrating that our effects are likely driven by elections. To estimate a placebo test, we randomly assign election timing to states 200 times and re-estimate our cash holdings results from Table 2. Fig. 5 plots the coefficient estimates from the placebo tests in black circles and our original coefficient estimates from Table 2 in blue diamonds. As expected, the distribution of black circles is centered around zero and our coefficient estimates are farther away than zero than almost all of these placebo estimates.

The pattern of our coefficient estimates is also important relative to the distribution of the placebo estimates. Before political uncertainty spikes, our estimates of election-year cash holdings relative to non-election-year cash holdings are high, far out to the top of the plotted distribution of estimated placebo coefficients. Then, when uncertainty is high and we estimate lower cash holdings, our coefficient estimates swing to the opposite end of the placebo coefficients. When firms begin building cash balances back up post-election, the effect again reverses. The relative extremeness of our coefficient estimates, combined with the pattern of extreme shifts, makes it highly unlikely that our estimated effects are spurious.

5.3.3. Alternate regression specifications

For robustness, we add a series of additional controls to our regression specifications. Our results and conclusions are not affected by these alternate specifications.

In Table 10, we show our results from Table 2 are robust to the inclusion of several other uncertainty proxies, including two variations of the economic policy uncertainty (EPU) index from Baker et al. (2016) (Panels A and B), the macroeconomic uncertainty index from Jurado, Ludvigson, and Ng (2015) and the financial uncertainty index from Ludvigson, Ma, and Ng (2018). Our empirical framework is cross-sectional, so we are unsurprised that the inclusion of time series uncertainty proxies does not greatly affect our coefficient estimates.

Our results are robust to the inclusion of alternate macroeconomic control variables, including state and national GDP. Jens (2017) controls for changes in state GDP, in addition to state unemployment. We do not include state GDP in our main specification because a change was made in its measurement in 2013, which would limit our sample to ending in 2013, instead of 2016. Results are available in our Internet Appendix.

We also consider alternate models including additional controls from Bates et al. (2009) and Faulkender et al. (2017), including industry cash flow risk, R&D scaled by sales, and a binary variable equal to one if a firm is a dividend payer. We do not include these controls in our main specification because doing so reduces our sample size by up to 60% and does not affect our results or conclusions. These results are also available in our Internet Appendix.

6. Conclusion

In this study, we examine the effects of political uncertainty on corporate cash holding decisions. Including political uncertainty in a dynamic model of investment and financing, we show that theory predicts firms hold more cash in advance of periods of higher uncertainty, and decrease cash greatly when the uncertainty resolves. We show that this prediction holds true in the data, as cash holdings as a fraction of assets are significantly larger in the quarters leading up to a gubernatorial election and lower in the quarters immediately following an election. We show that this increase in cash savings by firms is larger than the effect of political uncertainty on firms' investment and equity payout decisions, implying that firms are purposefully choosing to hold more cash, and that the cash balances are not a mechanical artifact of other decisions. Thus, we conclude that the precautionary savings motives outweighs the decline in investment when uncertainty is high.

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Fig. 1. **Simulated cash holdings.** Simulated cash holdings (cash divided by total assets) for models with no uncertainty (top panel) and with uncertainty (bottom panel). We begin with the model in Riddick and Whited (2009) and incorporate uncertainty like the exogenous uncertainty produced by gubernatorial elections. We alter the productivity shock to simulate high and low productivity regimes, which correspond to better and worse political environments for the firm. The solid vertical lines in the bottom panel indicate times when productivity regime shifts may occur, so uncertainty spikes just before the solid lines and resolves in the quarter indicated by the solid line. The simulation line from the top panel is repeated in dot-dash in the bottom panel for comparison.

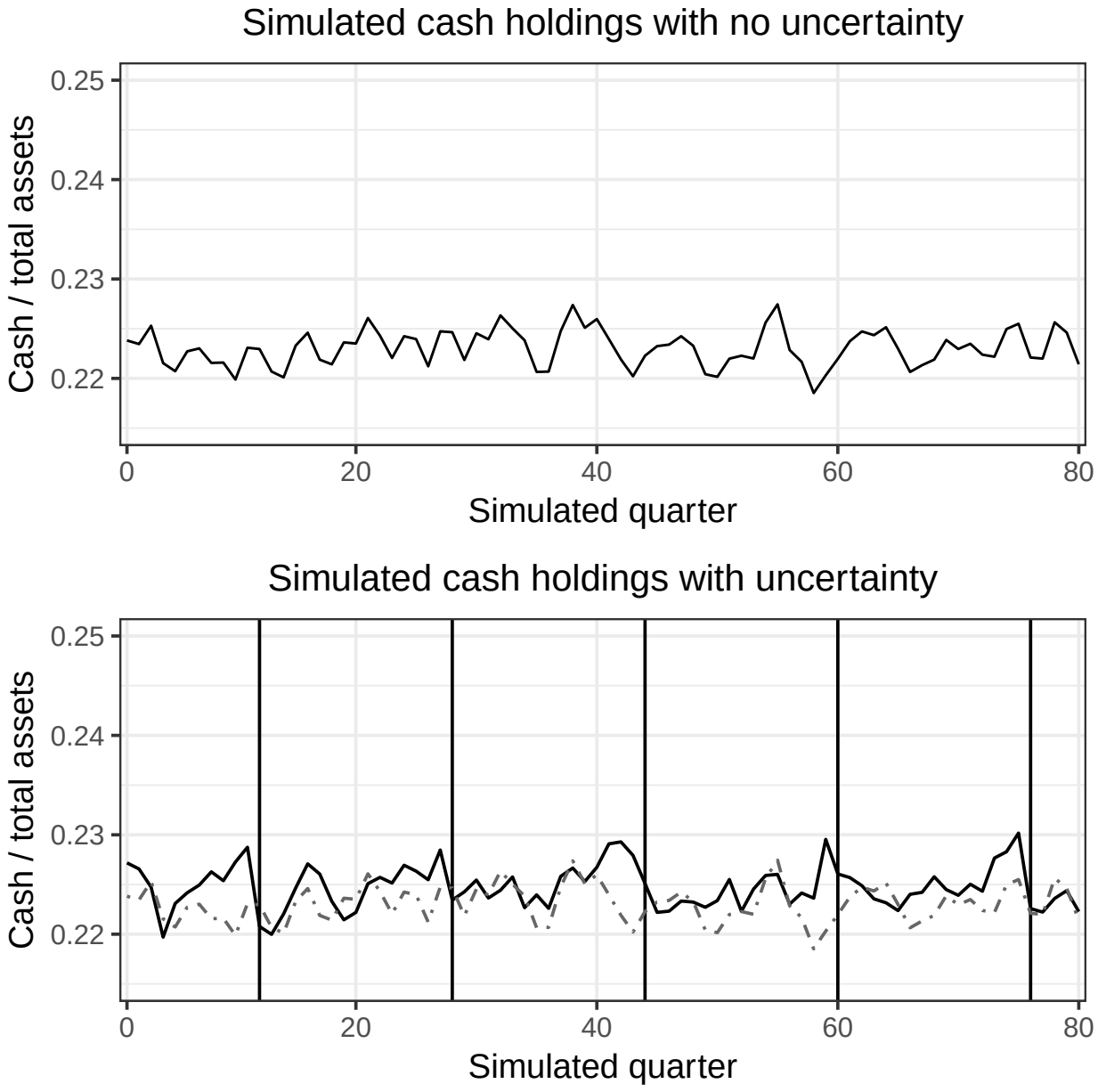

Fig. 2. **Simulated savings, investment, and payout.** Simulated sources and uses of cash for models with no uncertainty and with uncertainty. Investment is plotted in solid red lines, payout is plotted in blue dotted lines, and savings (change in cash) is plotted in dot-dashed black lines. The caption of Fig. 1 describes the simulations. The solid vertical lines in the bottom panel indicate times when productivity regime shifts may occur, so uncertainty spikes just before the solid lines and resolves in the quarter indicated by the solid line.

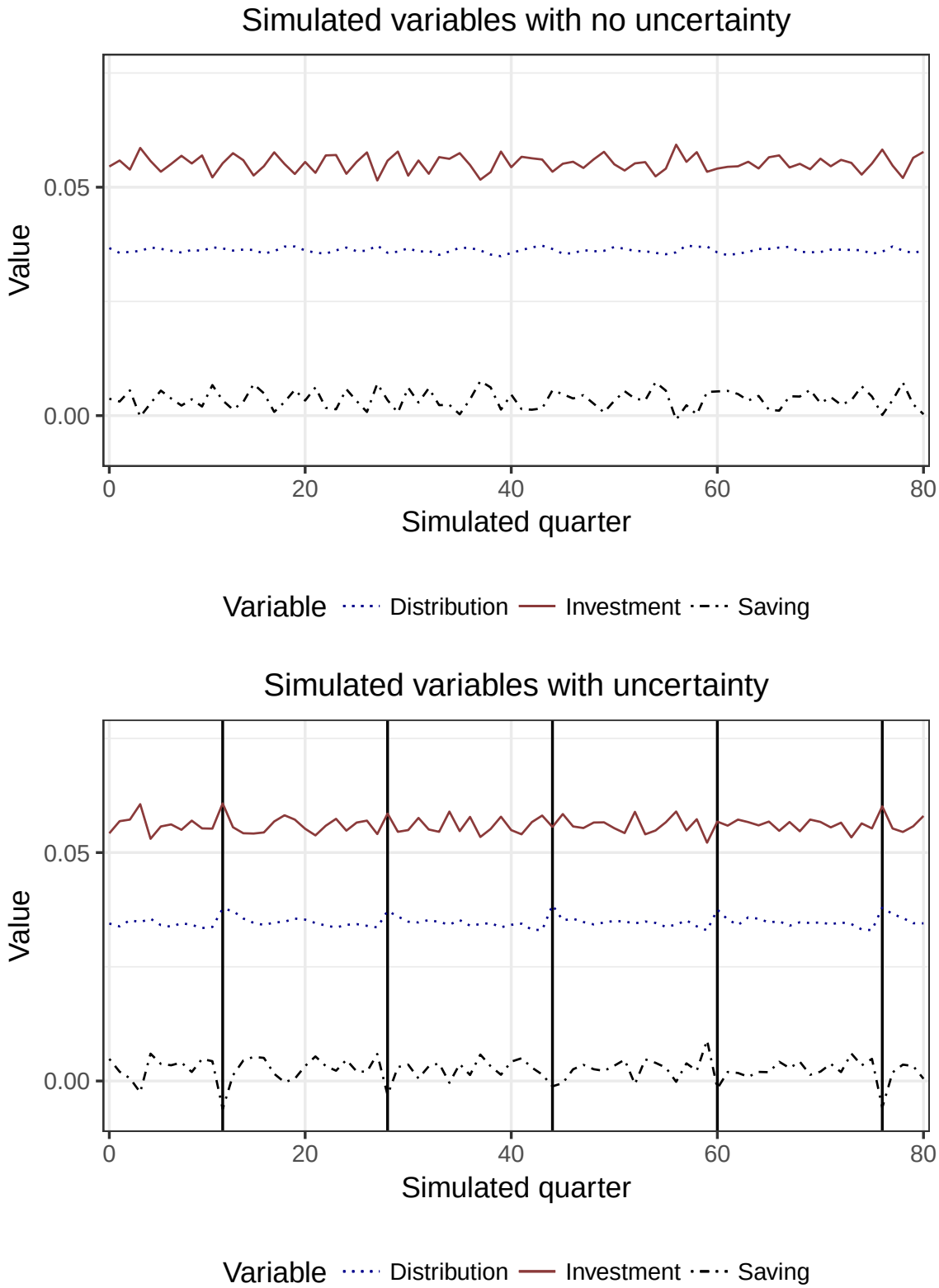

Fig. 3. **Parallel trends for cash holdings.** Plots of average quarterly cash holdings (cash scaled by total assets) for treated (election cycle) and control (non-election cycle) firms for a sample from 1987 to 2015. The black vertical line indicates the quarter of the election for the treated sample. Year before, year of, and year after election observations are in the treated sample. For each year of the election cycle, the control sample consists of the other three years. For example, for first four pairs of averages plotted, the treated sample comprises observations in the year before elections and the control sample comprises observations in the year of, year after, and two years after elections. Error bars are 95% confidence intervals.

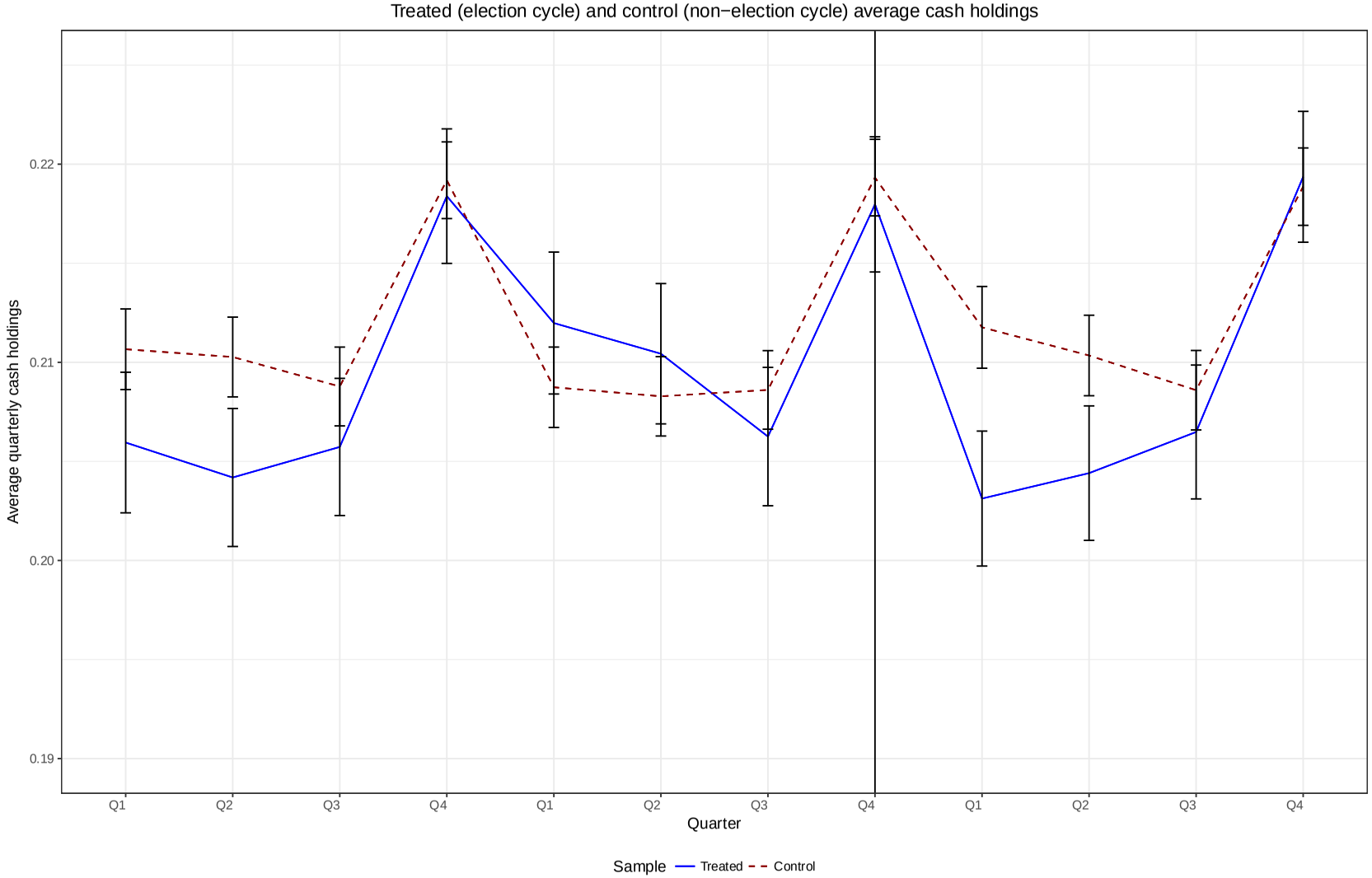

Fig. 4. **Changes in savings, investment, and payout around elections.** Plots of the estimated coefficients from Table 3 to show the relative magnitude of the estimated effects. Coefficients for savings are plotted in green diamonds, investment in blue boxes, and payout in red circles. See the caption of Table 3 for a description of the regression estimations. The black vertical line indicates the quarter of the election.

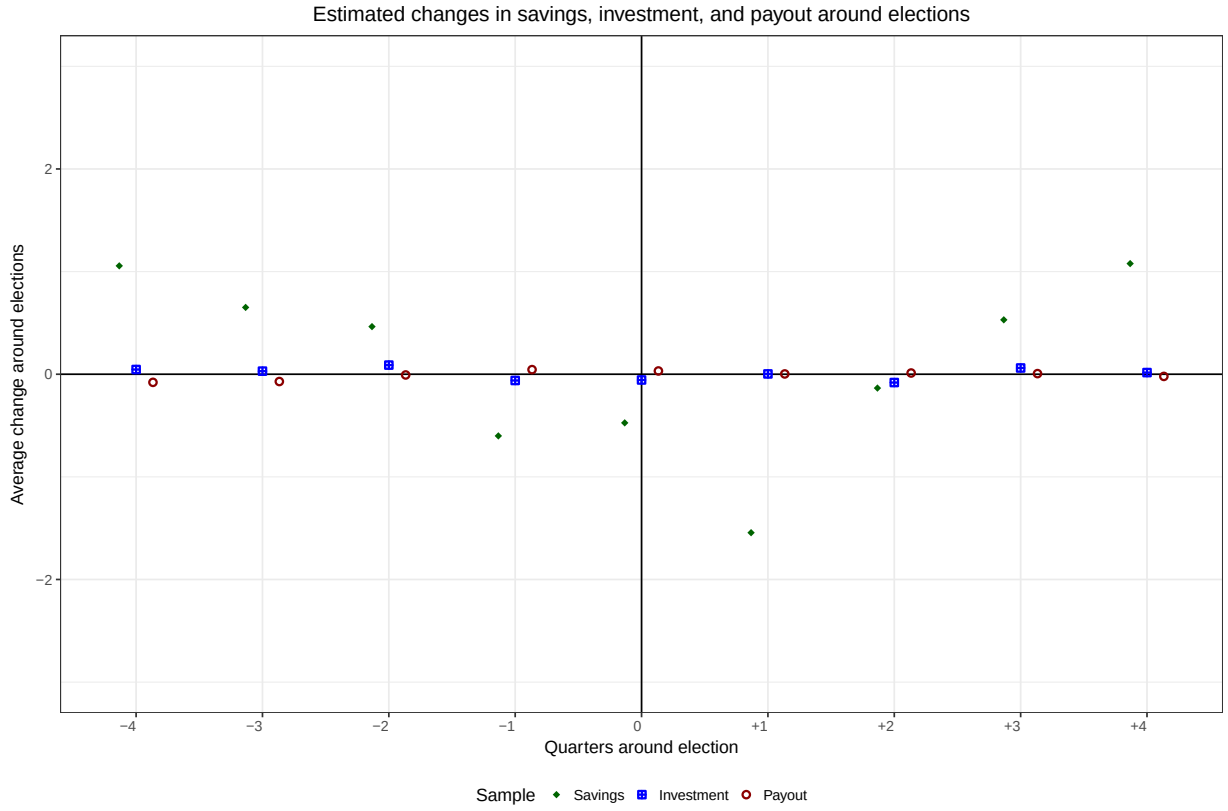

Fig. 5. **Placebo estimation results.** We randomly assign elections to states 200 times and re-estimate the cash holding regressions from Table 2. The hollow circles in the plot are the coefficient estimates from these placebo estimations. The blue diamonds are the actual coefficient estimates from our main results in Table 2.

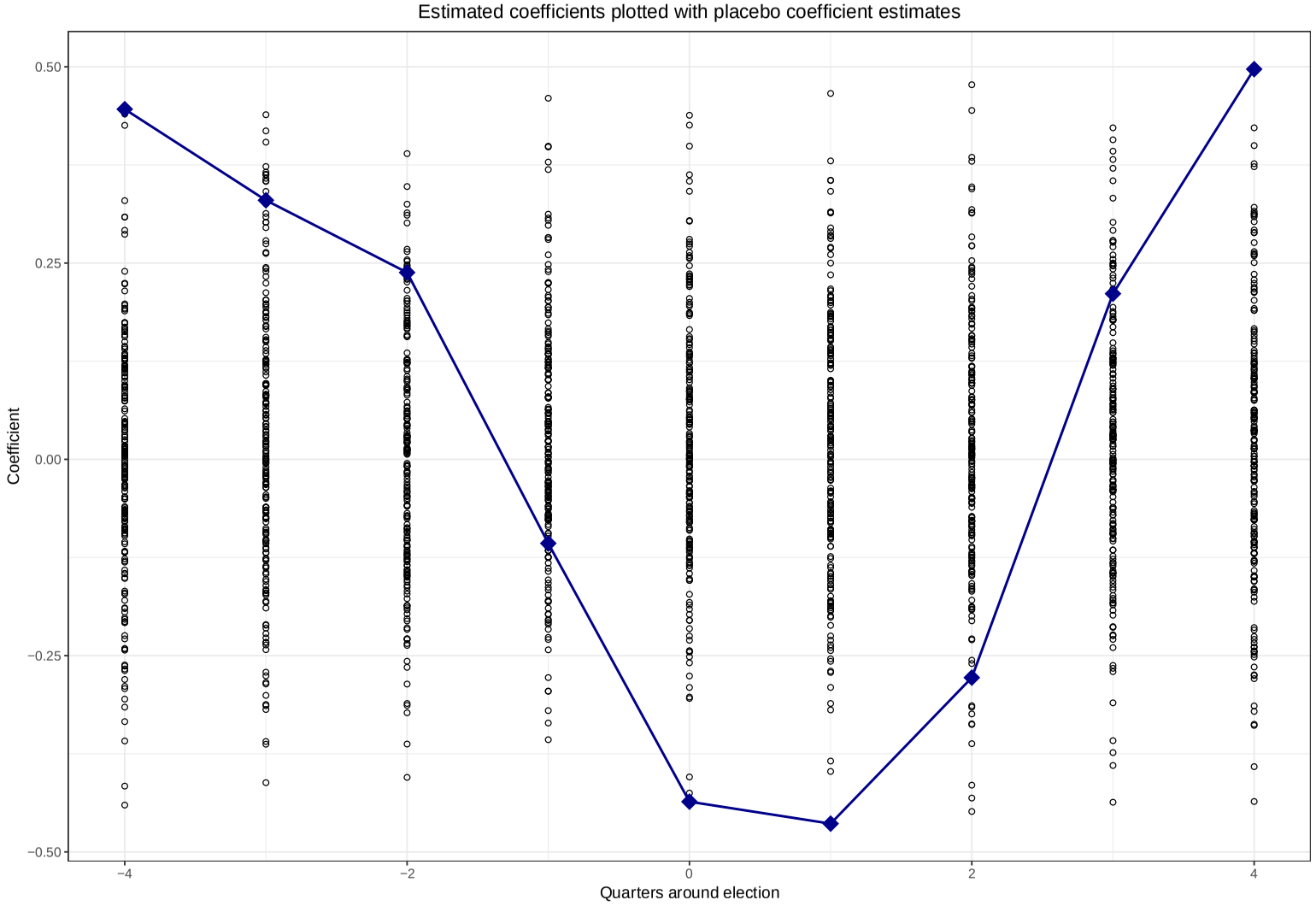

Table 1: **Summary statistics.** Summary statistics for measures of cash, firm controls, macroeconomic controls, and uncertainty measures that have been matched with firm-quarter observations for a sample from 1987 to 2016. Cash is scaled by total assets; change in cash and capital expenditures are scaled by a one quarter lag in total assets. Payout is the sum of repurchases and dividends, scaled by a one quarter lag in total assets. *No bond rating* is a binary variable equal to one if a firm does not have a bond rating in a quarter. *ROA* is operating income before depreciation scaled by total assets. Firm size is measured as log of total assets adjusted for cash. *Leverage* is the sum of long-term and short-term debt divided by assets. *Market-to-book ratio* is the sum of market value of equity, long-term debt, and short-term debt divided by total assets. *Working capital* is current assets minus current liabilities and cash divided by total assets. *Recession* is a binary variable equal to one if a quarter is designated by National Bureau of Economic Research (NBER) as being within a recession. *Election* is a binary variable equal to one for the year in which a state held a gubernatorial election. *Unemp* is quarterly state unemployment, calculated as the average monthly state unemployment within a quarter, from the Bureau of Labor Statistics (BLS). All variables used are winsorized at the 0.25% and 99.75% levels. The sample omits firms headquartered outside of the United States and in the District of Columbia and without fiscal year-end in December.

Statistic	N	Pctl(25)	Mean	Median	Pctl(75)	St. Dev.
Firm-level dependent variables						
Cash / total assets	254,224	0.03	0.22	0.10	0.33	0.26
Change in cash / total assets	251,952	−0.03	0.01	−0.001	0.02	0.25
Capex / total assets	254,224	0.003	0.02	0.01	0.02	0.04
Payout / total assets	233,404	0.00	0.01	0.00	0.01	0.04
Firm-level control variables						
No bond rating	254,224	1	0.79	1	1	0.41
ROA	254,224	−0.01	−0.03	0.02	0.04	0.38
Size	253,711	2.97	4.55	4.51	6.16	2.33
Leverage	254,224	0.02	0.22	0.18	0.35	0.21
Market-to-book	254,224	1.15	3.29	1.60	2.66	14.74
Working capital	254,224	0.08	0.25	0.23	0.39	0.22
Macroeconomic control variables						
Unemployment	239,738	0.05	0.06	0.06	0.07	0.02
Recession	254,224	0	0.12	0	0	0.32
Political uncertainty measure						
Election	254,224	0	0.24	0	0	0.43

Table 2: **Cash holdings regression results.** Regressions with quarterly cash holdings (cash scaled by total assets) multiplied by 100 as a dependent variable. The specification for the -4 quarter regression is: Cash $= \beta_0 + \beta_1$ yearbefore $\times$ Q4 $+ \beta_2$ yearbefore $+ \beta_3$ Q4 $+ \beta_4$ election $+ \beta_5$ yearafter $+$ δ controls $+ \epsilon$. The only coefficient reported in the table is β_1 (*quarter interaction*). *Yearbefore*, *election*, and *yearafter* are binary indicator variables equal to one if an observation is in the year before, year of, or year after a gubernatorial election in the state of headquarters of the firm. These variables are interacted with quarter indicator variables to create *quarter interaction* four quarters before and after the quarter of the election. For the -4 quarter regression, the *quarter interaction* is *yearbefore* $\times$ *Q4*; for the -3 quarter regression, the *quarter interaction* is *election* $\times$ *Q1*; and so on. Included firm controls are: leverage, log of total assets adjusted for cash, capital expenditures scaled by assets, market-to-book ratio, ROA, working capital scaled by total assets, and a binary variable equal to one if a firm has a bond rating in a quarter. Included macroeconomic controls are: *recession* and *unemp*. All control variables are defined in the caption of Table 1. Year, state, and industry indicator variables are included in each estimation, along with a binary variable equal to one if a year is a presidential election year and interactions between the presidential election variable and quarter variables. Standard errors are clustered at the state-level and given in parentheses below coefficient estimates.

	-4	-3	-2	-1	election	$+1$	$+2$	$+3$	$+4$
Quarter interaction	0.432^{***}	0.294^{***}	0.249^{***}	-0.111	-0.409^{***}	-0.432^{***}	-0.326^{***}	0.219^{**}	0.512^{***}
	(0.113)	(0.110)	(0.089)	(0.079)	(0.120)	(0.128)	(0.104)	(0.093)	(0.126)
Firm controls	yes	yes	yes	yes	yes	yes	yes	yes	yes
Macroeconomic controls	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year/state/industry/quarter fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year before/election/year after indicator	yes	yes	yes	yes	yes	yes	yes	yes	yes
Observations	239,299	239,299	239,299	239,299	239,299	239,299	239,299	239,299	239,299
R^2	0.536	0.536	0.536	0.536	0.536	0.536	0.536	0.536	0.536

Note: *p<0.1; **p<0.05; ***p<0.01.

Table 3: **Savings, investment, and payout regression results.** Regressions of quarterly cash savings (change in cash scaled by total assets) in Panel A, investment (capital expenditures scaled by total assets) in Panel B, and payout (the sum of dividends and buybacks scaled by total assets) in Panel C using the regression framework specified in the caption of Table 2. Dependent variables are all multiplied by 100 for ease in interpretation of coefficient estimates. Included firm controls are: lagged leverage, lagged log of total assets adjusted for cash, lagged market-to-book ratio, ROA, lagged working capital scaled by total assets, and a binary variable equal to one if a firm has a bond rating in a quarter. Capital expenditures scaled by total assets is also included in the payout regressions. Included macroeconomic controls are: *recession* and *unemp*. All control variables are defined in the caption of Table 1. Year, state, and industry indicator variables are included in each estimation, along with a binary variable equal to one if a year is a presidential election year and interactions between the presidential election variable and quarter variables. Standard errors are clustered at the state-level and given in parentheses below coefficient estimates.

	−4	−3	−2	−1	election	+1	+2	+3	+4
Panel A: Cash savings as a dependent variable									
Quarter interaction	1.056***	0.651**	0.464***	−0.601**	−0.474*	−1.544***	−0.135	0.536**	1.078***
	(0.299)	(0.312)	(0.168)	(0.268)	(0.250)	(0.426)	(0.274)	(0.232)	(0.325)
Observations	236,935	236,935	236,935	236,935	236,935	236,935	236,935	236,935	236,935
R^2	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
Panel B: Investment as a dependent variable									
Quarter interaction	0.046	0.030	0.089**	−0.061**	−0.056*	0.003	−0.081***	0.061**	0.016
	(0.068)	(0.025)	(0.038)	(0.025)	(0.034)	(0.035)	(0.028)	(0.027)	(0.029)
Observations	237,366	237,366	237,366	237,366	237,366	237,366	237,366	237,366	237,366
R^2	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141	0.141
Panel C: Payout as a dependent variable									
Quarter interaction	−0.079**	−0.071**	−0.007	0.045**	0.032	0.003	0.012	0.006	−0.021
	(0.037)	(0.028)	(0.018)	(0.020)	(0.040)	(0.032)	(0.022)	(0.018)	(0.040)
Observations	215,415	215,415	215,415	215,415	215,415	215,415	215,415	215,415	215,415
R^2	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089	0.089

Note: *p<0.1; **p<0.05; ***p<0.01.

Table 4: **Cash savings regression results in subsamples.** Regressions of quarterly cash savings (change in cash scaled by total assets) multiplied by 100 using the regression framework specified in the caption of Table 3 for Panel A in subsamples detailed by the italicized headers. Large and small firms (Panel A) are in the biggest and smallest tercile, respectively, of market capitalization in each year. Only the coefficients estimated for *quarter interaction* are presented. Standard errors are clustered at the state-level and given in parentheses below coefficient estimates.

	−4	−3	−2	−1	election	+1	+2	+3	+4
Panel A: Subsamples of firm by size tercile									
Small firms	1.094**	1.502***	1.245**	−1.047	−1.631***	−2.556***	−0.431	0.713	2.245***
	(0.544)	(0.419)	(0.578)	(0.649)	(0.520)	(0.452)	(0.595)	(0.627)	(0.466)
Large firms	−0.014	0.178	−0.140	−0.087	0.047	−0.078	0.063	−0.134	0.154
	(0.078)	(0.127)	(0.118)	(0.092)	(0.128)	(0.109)	(0.101)	(0.160)	(0.125)
Panel B: Firms with and without lines of credit									
With line of credit	0.166	−0.050	0.168	−0.256**	0.135	−0.186	−0.043	0.106	0.125
	(0.171)	(0.114)	(0.168)	(0.126)	(0.134)	(0.132)	(0.108)	(0.131)	(0.134)
Without lines of credit–	0.161	0.935***	−0.129	−0.518	−0.284	−0.765***	−0.508*	0.225	1.046***
firms in Dealscan only	(0.375)	(0.333)	(0.269)	(0.397)	(0.372)	(0.258)	(0.273)	(0.363)	(0.375)
Without lines of credit–	0.853***	0.889***	0.539	−0.555	−0.854***	−1.644***	−0.337	0.364	1.609***
all firms	(0.287)	(0.284)	(0.351)	(0.509)	(0.312)	(0.240)	(0.283)	(0.339)	(0.297)
Panel C: Firms with and without bond ratings									
With bond rating	0.184	−0.047	0.234**	0.116	−0.296**	−0.014	0.100	−0.214	0.131
	(0.127)	(0.065)	(0.094)	(0.098)	(0.148)	(0.158)	(0.102)	(0.180)	(0.235)
Without bond rating	0.583**	0.896***	0.569**	−0.737*	−0.714***	−1.385***	−0.196	0.215	1.386***
	(0.280)	(0.284)	(0.247)	(0.384)	(0.246)	(0.213)	(0.235)	(0.268)	(0.236)

Note: *p<0.1; **p<0.05; ***p<0.01

Table 5: **Summary statistics for payout and SEOs in subsamples.** Averages of quarterly binary payout, binary SEO, and average size of SEO scaled by total assets (given an SEO in a quarter) for the subsamples detailed by the italicized headers. We define an SEO as occuring if sale of stock as a percentage of assets is greater than 5%. Binary payout and SEO variables are binary variables equal to one if there is a payout or SEO in a quarter, respectively, and zero otherwise. T-statistics for tests of differences between means for each column are given in brackets.

	Average		
	Binary payout	Binary SEO	SEO/Assets
Panel A: Subsamples of firm by size tercile			
Small firms	6.84	16.52	42.61
Large firms	52.38	2.12	14.22
	[−258.25]	[111.12]	[74.84]
Panel B: Firms with and without lines of credit			
With line of credit	41.38	3.26	23.47
Without lines of credit	26.79	6.50	34.36
	[70.46]	[−33.45]	[−19.96]
Panel C: Firms with and without bond ratings			
With bond rating	54.85	2.19	13.59
Without bond rating	19.16	9.41	38.45
	[171.04]	[−87.65]	[−69.88]

Table 6: **Payout regression results in subsamples.** Regressions of quarterly payout (the sum of dividends and buybacks scaled by total assets) multiplied by 100 using the regression framework specified in the caption of Table 3 for Panel C in subsamples detailed by the italicized headers. Large and small firms (Panel A) are in the biggest and smallest tercile, respectively, of market capitalization in each year. Only the coefficients estimated for *quarter interaction* are presented. Standard errors are clustered at the state-level.

	−4	−3	−2	−1	election	+1	+2	+3	+4
Panel A: Subsamples of firm by size tercile									
Small firms	−0.004	−0.014	0.007	0.006	0.001	0.005	−0.004	−0.002	0.001
	(0.008)	(0.012)	(0.007)	(0.008)	(0.007)	(0.013)	(0.006)	(0.006)	(0.009)
Large firms	−0.012	0.013	−0.022***	−0.006	0.014*	0.023**	−0.003	−0.010*	−0.011*
	(0.011)	(0.013)	(0.006)	(0.005)	(0.008)	(0.011)	(0.006)	(0.005)	(0.006)
Panel B: Firms with and without lines of credit									
With line of credit	0.003	−0.015	−0.005	−0.001	0.020***	0.026*	−0.012**	−0.010*	−0.005
	(0.008)	(0.009)	(0.006)	(0.005)	(0.007)	(0.013)	(0.005)	(0.006)	(0.010)
Without line of credit –	−0.006	−0.009	0.002	0.003	0.004	0.006	−0.008	−0.009	0.011
firms in Dealscan only	(0.008)	(0.018)	(0.007)	(0.010)	(0.012)	(0.014)	(0.006)	(0.008)	(0.008)
Without line of credit –	−0.001	−0.005	0.002	−0.000	0.003	−0.000	−0.002	−0.003	0.006
all firms	(0.006)	(0.009)	(0.004)	(0.005)	(0.006)	(0.007)	(0.004)	(0.004)	(0.004)
Panel C: Firms with and without bond ratings									
With bond rating	−0.018	0.007	−0.033***	−0.001	0.026***	0.016	0.005	−0.015***	−0.006
	(0.013)	(0.016)	(0.008)	(0.007)	(0.010)	(0.013)	(0.008)	(0.005)	(0.009)
Without bond rating	−0.006	−0.003	0.002	−0.001	0.001	0.008	−0.003	0.000	−0.005
	(0.005)	(0.008)	(0.004)	(0.003)	(0.005)	(0.007)	(0.004)	(0.004)	(0.005)

Note: *p<0.1; **p<0.05; ***p<0.01

Table 7: **Sale of stock regression results in subsamples.** Regressions of sale of stock as a percentage of total assets if the percentage is greater than 5% (i.e., SEOs) using the regression framework specified in the caption of Table 2 in subsamples detailed by the italicized headers. For ease of interpretation, the dependent variable is multiplied by 100. Only the coefficients estimated for *quarter interaction* are presented. Included firm controls are: lagged log of total assets, lagged market-to-book ratio, lagged leverage, and lagged cash scaled by total assets. Firm control variables are defined in the caption of Table 1. Included macroeconomic controls are: *recession* and *unemp*. Macroeconomic controls are also defined in the caption of Table 1. Year, state, industry, and quarter indicator variables are included in each estimation, along with a binary variable equal to one if a year is a presidential election year and interactions between the presidential election variable and quarter variables. Standard errors are clustered at the state-level.

	−4	−3	−2	−1	election	+1	+2	+3	+4
Panel A: Subsamples of firm by size tercile									
Small firms	1.128**	1.504***	1.428**	−1.385**	−1.411**	−2.164***	−0.693	0.742	1.887***
	(0.499)	(0.544)	(0.604)	(0.611)	(0.658)	(0.551)	(0.599)	(0.675)	(0.662)
Large firms	0.076	0.103***	−0.012	−0.035	−0.057	0.024	−0.074	0.012	0.038
	(0.049)	(0.034)	(0.056)	(0.045)	(0.065)	(0.044)	(0.046)	(0.065)	(0.064)
Panel B: Firms with and without lines of credit									
With line of credit	0.535**	0.081	0.386**	−0.218*	−0.236	0.002	−0.183*	0.231*	−0.053
	(0.248)	(0.121)	(0.154)	(0.128)	(0.160)	(0.086)	(0.097)	(0.131)	(0.138)
Without lines of credit–	0.277	0.811**	0.195	−0.824**	−0.144	−0.995***	−0.256	0.421	0.726**
firms in Dealscan only	(0.403)	(0.342)	(0.303)	(0.355)	(0.545)	(0.303)	(0.320)	(0.390)	(0.341)
Without lines of credit–	0.536**	0.833**	0.802*	−0.967***	−0.615	−1.666***	−0.385	0.475	1.415***
all firms	(0.267)	(0.336)	(0.429)	(0.367)	(0.514)	(0.428)	(0.351)	(0.406)	(0.536)
Panel C: Firms with and without bond ratings									
With bond rating	0.311**	0.070	0.146	0.047	−0.255**	0.036	0.060	0.002	−0.096
	(0.151)	(0.059)	(0.099)	(0.082)	(0.107)	(0.075)	(0.059)	(0.059)	(0.103)
Without bond rating	0.608***	0.827***	0.780**	−0.862***	−0.702*	−1.200***	−0.317	0.287	1.148***
	(0.219)	(0.300)	(0.315)	(0.306)	(0.374)	(0.323)	(0.272)	(0.363)	(0.434)

Note: *p<0.1; **p<0.05; ***p<0.01.

Table 8: **SEO regression results in subsamples.** Regressions of a binary variable equal to one if a firm had an SEO (sale of stock as a percentage of assets is greater than 5%) in a quarter using the regression framework specified in the caption of Table 2 in subsamples detailed by the italicized headers. For ease of interpretation, the dependent variable is multiplied by 100. Only the coefficients estimated for *quarter interaction* are presented. Included firm controls are: lagged log of total assets, lagged market-to-book ratio, lagged leverage, and lagged cash scaled by total assets. Firm control variables are defined in the caption of Table 1. Included macroeconomic controls are: *recession* and *unemp*. Macroeconomic controls are also defined in the caption of Table 1. Year, state, industry, and quarter indicator variables are included in each estimation, along with a binary variable equal to one if a year is a presidential election year and interactions between the presidential election variable and quarter variables. Standard errors are clustered at the state-level.

	−4	−3	−2	−1	election	+1	+2	+3	+4
Panel A: Subsamples of firm by size tercile									
Small firms	2.325***	2.389***	1.122**	−1.310*	−2.103***	−3.251***	−1.046	1.347	2.895***
	(0.520)	(0.825)	(0.557)	(0.716)	(0.647)	(0.849)	(0.655)	(0.880)	(0.694)
Large firms	0.447**	0.934***	−0.089	−0.715***	−0.149	−0.315	0.189	0.087	0.054
	(0.186)	(0.263)	(0.271)	(0.225)	(0.197)	(0.277)	(0.237)	(0.206)	(0.184)
Panel B: Firms with and without lines of credit									
With line of credit	0.980***	0.887***	0.535	−0.886***	−0.522	−0.483*	−0.157	0.361	0.283
	(0.350)	(0.302)	(0.371)	(0.283)	(0.331)	(0.252)	(0.316)	(0.296)	(0.208)
Without lines of credit–	0.693	1.668***	0.438	−1.104**	−0.998	−1.960***	−0.260	0.334	1.882***
firms in Dealscan only	(0.465)	(0.550)	(0.348)	(0.435)	(0.631)	(0.565)	(0.645)	(0.577)	(0.637)
Without lines of credit–	1.493***	1.589***	0.836***	−1.227***	−1.178***	−2.590***	−0.534	0.938*	2.170***
all firms	(0.283)	(0.524)	(0.320)	(0.444)	(0.449)	(0.612)	(0.470)	(0.520)	(0.500)
Panel C: Firms with and without bond ratings									
With bond rating	0.987***	0.793***	0.254	−0.162	−0.871***	−0.147	0.678***	−0.355	−0.164
	(0.285)	(0.302)	(0.345)	(0.274)	(0.276)	(0.312)	(0.249)	(0.282)	(0.241)
Without bond rating	1.464***	1.868***	0.893***	−1.408***	−1.328***	−2.181***	−0.648*	0.875*	1.979***
	(0.224)	(0.561)	(0.234)	(0.460)	(0.359)	(0.592)	(0.354)	(0.451)	(0.415)

Note: *p<0.1; **p<0.05; ***p<0.01.

Table 9: **Robustness of cash holdings results in firms with and without foreign income.** Regressions of cash holdings (cash scaled by total assets) multiplied by 100 using the regression framework specified in the caption of Table 2 in subsamples of firms with and without foreign income. Only the coefficients estimated for *quarter interaction* are presented. Standard errors are clustered at the state-level and given in parentheses below coefficient estimates.

	−4	−3	−2	−1	election	+1	+2	+3	+4
With foreign income	0.461***	0.084	−0.030	0.046	−0.093	−0.065	0.215***	−0.011	−0.135
	(0.153)	(0.170)	(0.094)	(0.105)	(0.191)	(0.150)	(0.083)	(0.101)	(0.139)
Without foreign income	0.430***	0.460***	0.368***	−0.160	−0.628***	−0.630***	−0.387***	0.281**	0.697***
	(0.115)	(0.148)	(0.130)	(0.113)	(0.144)	(0.165)	(0.149)	(0.137)	(0.169)

Note: *p<0.1; **p<0.05; ***p<0.01

Table 10: **Re-estimation of main cash holdings results, including additional uncertainty proxies.** Results from re-estimations of the regressions in Table 2. In each panel, a different alternate uncertainty proxy is included in the regression specification described in the caption of Table 2. In Panels A and B, two variations on the Baker et al. (2016) EPU index are included, "news" and "baseline", respectively. We calculate quarterly indexes by averaging monthly indexes over the quarter. In Panel C, the quarterly Jurado et al. (2015) macroeconomic uncertainty index is included, and in Panel C, the quarterly Ludvigson et al. (2018) financial uncertainty index is included. Standard errors are clustered at the state-level and given in parentheses below coefficient estimates.

	−4	−3	−2	−1	election	+1	+2	+3	+4
Panel A: Re-estimation of main cash holdings results including EPU news index									
Quarter interaction	0.408***	0.228**	0.263***	−0.072	−0.394***	−0.350***	−0.339***	0.217**	0.447***
	(0.108)	(0.104)	(0.090)	(0.078)	(0.118)	(0.116)	(0.105)	(0.092)	(0.117)
EPU (news)	−0.005***	−0.006***	−0.006***	−0.006***	−0.005***	−0.006***	−0.006***	−0.006***	−0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Panel B: Re-estimation of main cash holdings results including EPU baseline index									
Quarter interaction	0.384***	0.201**	0.258***	−0.058	−0.378***	−0.354***	−0.335***	0.217**	0.451***
	(0.104)	(0.101)	(0.089)	(0.078)	(0.115)	(0.114)	(0.105)	(0.091)	(0.116)
EPU (baseline)	−0.009***	−0.010***	−0.010***	−0.011***	−0.009***	−0.010***	−0.010***	−0.010***	−0.009***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Panel C: Re-estimation of main cash holdings results including Jurado et al. (2015) macroeconomic uncertainty index									
Quarter interaction	0.409***	0.299***	0.247***	−0.127	−0.401***	−0.418***	−0.304***	0.225**	0.482***
	(0.109)	(0.111)	(0.089)	(0.082)	(0.118)	(0.125)	(0.101)	(0.095)	(0.120)
macro uncertainty	−1.686***	−1.838***	−2.134***	−2.220***	−1.618***	−2.041***	−2.165***	−2.210***	−1.578***
	(0.575)	(0.615)	(0.632)	(0.650)	(0.583)	(0.611)	(0.613)	(0.646)	(0.597)
Panel D: Re-estimation of main cash holdings results including Ludvigson et al. (2018) financial uncertainty index									
Quarter interaction	0.428***	0.284***	0.260***	−0.095	−0.427***	−0.439***	−0.335***	0.218**	0.527***
	(0.111)	(0.107)	(0.091)	(0.075)	(0.124)	(0.130)	(0.105)	(0.092)	(0.133)
financial uncertainty	−0.872**	−0.654*	−0.716*	−0.684*	−0.722*	−0.682*	−0.729*	−0.693*	−0.702*
	(0.412)	(0.379)	(0.397)	(0.384)	(0.387)	(0.398)	(0.395)	(0.387)	(0.410)

Note: *p<0.1; **p<0.05; ***p<0.01.