Political Uncertainty and Investment:
Causal Evidence from U.S. Gubernatorial Elections

by

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Submitted in Partial Fulfillment of the
Requirements for the Degree
Doctor of Philosophy

Supervised by Professor Toni Whited

Business Administration

Simon School of Business

University of Rochester

Rochester, New York

2013

Biographical Sketch

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Acknowledgments

I gratefully acknowledge helpful comments and suggestions from Matthew Gustafson, Steven Jens, Ron Kaniel, Leonard Kostovetsky, G. William Schwert, Toni Whited, and AEC 510 seminar participants.

Abstract

I study the causal effects of political uncertainty on firm investment in the U.S. Using a difference-in-difference model, I estimate that the investment in Q3 of firms headquartered in a state with a gubernatorial election is 4.9% lower than the investment of firms in states without an upcoming election. Small firms, politically sensitive firms, and firms with more potential investments and higher levels of asset specificity are more likely to postpone investment. The decline in investment is as high as 15% in some subsamples. Volatility of firms headquartered in states about to elect a governor is higher than the volatility of firms headquartered in non-election states in the third and fourth quarters, directly linking increased uncertainty with the decline in investment. There is an increase in investment in the quarter following the election, but the magnitude depends heavily on whether an incumbent or a new governor is elected. Investment in the year after an election is lower if a new governor is elected, likely because uncertainty remains even after the election results are known. Volatility is higher for firms in states that elected a new governor than the volatility of firms in states that re-elected an incumbent, also suggesting that some uncertainty remains after a new governor is elected. Finally, I use term limits to test against alternative explanations for changes in investment around elections and as an instrumental variable to address the endogeneity in measuring close elections. The magnitude of the effect of close elections on investment is roughly three times larger when using term limits as an instrument than the magnitude found without an instrument.

Contributors and Funding Sources

This work was supervised by a dissertation committee consisting of Professors Toni Whited (advisor), G. William Schwert, and Leonard Kostovetsky. All work for the dissertation was completed independently by the student.

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1 Introduction

I examine how firms' investment is causally affected by political uncertainty. Although many have found links between generic uncertainty and investment, examining political uncertainty is important because politics is an increasingly relevant source of uncertainty. In recent years, a deadlocked congress, indecisive heads of government, wide-sweeping legislative changes, and controversial court cases have been identified by the media as sources of political uncertainty that have caused firms to postpone investment. The discussion in the media raises two questions: whether political uncertainty in the United States is sufficiently large enough to affect firm behavior and whether the effect is causal. I find a significant change in firm investment before and after gubernatorial elections in a sample of U.S. firms. I use a difference-in-difference framework with gubernatorial elections as the exogenous treatment to establish a causal link between investment and uncertainty. In addition, I identify several firm characteristics that result in a greater impact of political uncertainty on firm investment. Finally, I propose term limits as an instrumental variable to address the endogeneity in measuring close elections and as a tool to test against alternative hypotheses.

There are several possible explanations for the change in investment around elections. However, all evidence for these hypotheses has been found only in international samples. Motivated by a story of elections creating political uncertainty, which results in firms delaying investment, Julio and Yook (2012) find a decline in investment

in the year of the election for a sample of 248 elections in 48 countries. Alternatively, politicians may attempt to manipulate firm investment to influence election results as a means of staying in office. Dinc (2005) and Cole (2009) document an increase in the lending of government-owned banks in India before elections. Firms may also attempt to manipulate their investment to influence election results to protect valuable political connections. Bertrand, Kramarz, Schoar, and Thesmar (2006) document an increase in the investment of firms with politically connected CEOs before French municipal elections. Given the relatively low levels of political uncertainty in the U.S. and the differences in the political environment between the U.S. and other countries, the question of whether these hypotheses are relevant for firms within the U.S. needs to be addressed. Additionally, no study has yet established a causal effect of political uncertainty on firm investment.

This paper makes four main contributions to the literature on investment under uncertainty and the literature on how firms are affected by political actors and the political environment to which they are exposed. First, this paper is among the first to provide evidence of the effect of political uncertainty on investment within the U.S.¹. In the U.S., Democrats and Republicans are much closer together on the ideology spectrum than are parties in other countries. While the election of a

¹To my knowledge, I am the first to examine how political uncertainty created by U.S. elections affects domestic firm investment. Gulen and Ion (2012) use the uncertainty measure from Baker, Bloom, and Davis (2012) to look at the effects of political uncertainty between elections on investment.

Democratic governor may result in an increase in the minimum wage, it is unlikely to result in a seizure of assets. When comparing the U.S. to countries that have been included in international samples (Julio and Yook, 2012), Argentina, Colombia, Malaysia, Pakistan, and Venezuela, the U.S. is a very politically stable country.

Although an election in the U.S. is expected to create a lower level of political uncertainty than elections in an international sample, gubernatorial elections still have the potential to create a significant level of uncertainty. After the election of a new governor, policies that affect firm investment, including minimum wage laws, labor laws generally, mining regulations, and access to lower-cost financing, can be changed by a newly elected governor. Therefore, before the election, uncertainty about future state policies can influence firms' investment decisions.

I find a 4.9% decline in Q3 in the investment of firms headquartered in states with a gubernatorial election in the following quarter, relative to the investment of firms without an upcoming gubernatorial election, which is consistent with the political uncertainty created by elections affecting firm investment. For the average firm, this is a decline in investment, capital expenditures as a percentage of assets, from 2.014% to 1.915%. While significant, this effect is lower than the decline in investment seen before elections in an international sample. Julio and Yook (2012) find a 4.8% decline in firm-level annual investment in elections years in an international sample. Given that my result is estimated with quarterly rather than annual data, the effect of gubernatorial elections on firm investment is roughly one-quarter the size of the

effect seen in the international sample.

I find that the investment of firms headquartered in states that elected a governor in the previous quarter is 3.6% higher than the investment of firms headquartered in states that did not just elect a governor. There is an increase in investment in Q1, the quarter directly following the election, but an overall decline in investment in the year after the election, for firms headquartered in states that have elected a new governor. In contrast, there is only an increase in investment in Q1 for firms headquartered in states that have re-elected an incumbent. This suggests an incomplete resolution of uncertainty in the year after a new governor is elected. Supporting this interpretation, average monthly volatility, a measure of uncertainty, is higher after the election of a new governor when compared with an incumbent governor's re-election.

These results differ from those seen in international samples; Julio and Yook (2012) estimate only an increase in investment following elections. This difference is likely because their sample is roughly 75% parliamentary systems, while the U.S. has a presidential system. In a parliamentary system, the elected head of government has parliamentary majority. Therefore, he can be expected to have the ability to enact his chosen policies. In contrast, a governor (president) must work with the legislature (Congress) to pass laws. Even after an election has occurred, significant political uncertainty concerning a governor's ability to work with the legislature may exist. The differences between the year-after election results following presidential and parliamentary elections highlight the need for a study focusing on only domestic

firms.

The second contribution of the paper is identifying several firm characteristics that result in a higher sensitivity to political uncertainty. The decline in pre-election investment is greatest for small firms, which are more likely to be contained within one state and more greatly impacted by changes in state policy. In addition, politically sensitive firms, identified by industry, have a decline in pre-election investment of nearly 15%. Finally, the result is strong in firms with greater asset specificity; these are the firms for which post-election disinvestment would be the most costly. Therefore, they are more likely to postpone investment in times of uncertainty rather than risk high disinvestment costs if conditions within a state change.

Third, to my knowledge, I am the first to make a causal statement about the effect of political uncertainty on firm investment. I estimate a 4.9% decline in investment before elections with a difference-in-difference-in-difference (DDD) model with gubernatorial elections, presidential elections, and Q3 as exogenous treatments; this technique has not yet been used in this literature. With this DDD estimation, I am comparing the investment of firms headquartered in states with a gubernatorial election in the following quarter, the treated group, against the investment of firms headquartered in states without an upcoming gubernatorial election, the control group. After controlling for any systematic, pre-existing differences between the investment of firms with different gubernatorial election cycles and around presidential elections, I am left with only the effect of political uncertainty on investment.

Finally, I propose term limits as a novel instrument to address endogeneity in measuring close elections and as a tool to test against alternative explanations for the changes in investment around elections. Close elections have a higher level of uncertainty, which should create a greater decline in pre-election investment. However, there is also the possibility for reverse causality; poor economic conditions in a state, which would include low firm investment, may result in a close election as the constituency reacts to the poor local economy. Using term limits as an IV allows me to address any possible endogeneity in measuring close elections, resulting in a measure that captures the effect of political uncertainty, rather than just the effect of elections, on firm investment.

Thirty-six states in my sample have term limit laws, which prevent an incumbent governor from seeking re-election². Incumbent governors overwhelmingly win re-election. From 1998 to 2010, 97 incumbent governors sought re-election with only 17 losses, a re-election rate of roughly 82.5%. Term limits remove the incumbent from the race. Therefore, an election without an incumbent is inherently more uncertain, and the election should be closer. As firms have no control over the term limit laws for their states, the only way in which term limits should affect firm investment is

²Simply using elections in which there is no incumbent would not sufficiently address the endogeneity. An incumbent has a choice about whether to seek re-election, and may choose to refrain from running again if he does not believe he will win. Poor economic conditions in a state could influence that decision. Therefore, term limits, which remove the decision from the incumbent, are necessary to ensure the instrument is valid.

through increased uncertainty in the election. When using a fitted closeness variable, the estimated decline in investment before close elections for small firms is nearly 40%, three times the effect estimated using only election closeness.

Term limits are also useful in testing against alternative explanations for how firm investment changes around elections. Previous studies have tested against these alternative hypotheses by removing politically connected firms from the sample, with the idea that if the decline in investment is present after politically connected firms are removed, the decline is driven by something other than firm or politician manipulation (Julio and Yook, 2012; Faccio, 2004; Faccio, Masulis, and McConnell, 2006). However, this technique hinges on the researcher's ability to correctly identify all firms with the incentives to manipulate investment around elections. I avoid this problem by exploiting the fact that term limits lower incentives for firm and politician manipulation but increase uncertainty. Therefore, a larger decline in investment before a term limit election is evidence in favor of the effect being driven by uncertainty, rather than firm or politician manipulation of investment. Results from a difference-in-difference estimation with term limit as a treatment rule out politician and firm manipulation of investment as driving my results.

In addition, I test against a new alternative hypothesis, that governors withdraw support from firm investment leading up to an election, causing a decline in investment before elections (a lame duck effect). Average monthly volatility is higher in firms headquartered in states with upcoming elections, establishing a direct link be-

tween the decrease in investment and uncertainty before elections. Additionally, I find a decline in pre-election and increase in post-election disinvestment. Like investment, disinvestment is costly-to-reverse and should be postponed in times of uncertainty. However, a lame duck governor should not influence firm disinvestment. Taken together, this evidence supports my results being driven by political uncertainty, rather than a decline in gubernatorial support for investment before elections.

The paper proceeds as follows: related literature is discussed in Section 2; the hypotheses are presented in Section 3; Section 4 defines and discusses data and variables; results and robustness are presented in Sections 5 and 6, respectively; and Section 7 concludes.

2 Previous Literature

2.1 Investment Under Uncertainty

Early theory literature was split as to whether investment should increase or decrease under uncertainty. Models with a convex marginal revenue product of capital (Oi, 1961; Hartman, 1972, 1976; Abel, 1983), an option to abandon a project (Roberts and Weitzman, 1981), costly entry and exit and time-to-build (Bar-Ilan and Strange, 1996), and bankruptcy, which limits the downside risk of a project, (Stiglitz and Weiss, 1981) predict an increase in investment in times of uncertainty. In contrast, literature with a single firm (Bernanke, 1983; Pindyck, 1991; Bertola, 1998; Dixit,

1989) or several firms (Leahy, 1993) and irreversible investment predict a decline in investment under uncertainty.

Empirical evidence on the relation between uncertainty and investment comes from the investment, irreversible investment, and real options literature. When regressing Tobin’s q on risk, Brainard, Shoven, and Weiss (1980) find both positive and negative coefficients on risk. Leahy and Whited (1996) look at the investment behavior of U.S. firms, find that uncertainty decreases investment, and cite irreversible investment as the primary explanation. Pindyck and Solimano (1993) and Caballero and Pindyck (1996) look at irreversible investment by examining the relation between uncertainty and an “investment trigger,” the point at which a firm invests. Hurn and Wright (1994) find that the level, but not the variance, of oil prices is related to delays between discovery and development of oil fields in the North Sea. Bloom (2007) models macro uncertainty shocks, after which firms pause investment and hiring. Stein and Stone (2012) provide causal evidence on the effect of uncertainty on investment, hiring, and R&D spending.

2.2 Political Uncertainty and Investment

In addition to papers examining investment under generic uncertainty, this paper is related to the literature of investment under political uncertainty, specifically. Alesina and Perotti (1996) look at 70 countries between 1960 and 1985 and find that income inequality increases social political instability which, in turn, reduces investment.

Durnev (2011) examines whether, when making investment decisions, managers rely less on stock prices during election years. Bloom, Bond, and Van Reenen (2007) use GMM on simulated panel data to reject the null hypothesis of common, linear responses by firms to demand shocks, leading to the conclusion that the response of firms to policy stimulus may be weaker in times of high uncertainty, as uncertainty makes firms more cautious (decreases investment). Chen and Funke (2003) look at the effects of political risk factors (“policy risk”) on foreign direct investment. Gulen and Ion (2012) look at the effects of uncertainty between elections on investment in the U.S.

Julio and Yook (2012) find a 4.8% decrease in investment in election years, controlling for growth opportunities and economic conditions, in a sample including 248 national elections held by 48 countries between 1980 and 2005. They find the decrease in investment is larger for closer elections and firms in countries with fewer checks and balances on executive authorities, a less stable government, and a higher ratio of central government spending to GDP.

2.3 Competing Hypotheses

I hypothesize that the decline in investment before an election is due to the political uncertainty created by elections and irreversible firm investment. Two competing hypotheses attempt to explain changes in firm behavior around elections. First, the political business cycle hypothesis posits that politicians may attempt to manipulate

policies before an election to influence firm investment (Nordhaus, 1975). Alternatively, firms may alter their investment behavior around elections in order to influence the election to keep their preferred politician in office.

Evidence on the political business cycle hypothesis has been mixed. Drazen (2001) finds no evidence of a significant increase in economic activity before an election in the U.S. or any OECD country. However, Dinc (2005) and Cole (2009) find a significant increase in the lending by government-owned banks in India prior to elections.

The hypothesis that firms have incentives to manage investment to influence elections comes from studies gauging the value of political connections (Faccio, 2004; Faccio et al., 2006; Kostovetsky, 2009; Bertrand, Schoar, and Thesmar, 2007; Do, Lee, and Nguyen, 2012). Bertrand et al. (2006) find evidence of an increase in investment in firms with a politically connected CEO before municipal elections in France. Although the hypothesis is usually framed in such a way that a rise in investment is predicted before an election, it should be noted that firms may also have incentives to try to change the administration. If firms are willing to manipulate investment to influence election results, investment may decline before an election to oust an unfavorable official.

Julio and Yook (2012) follow Faccio (2004) and Faccio et al. (2006) in testing the theory that politically connected firms manipulate investment before an election; firms are identified as politically connected if one of the directors or top shareholders is a member of parliament, a minister, or closely related to a top politician or party.

When politically connected firms are omitted from Julio and Yook’s (2012) sample, the results are consistent with their previous findings. Julio and Yook (2012) also investigate whether politicians attempt to manipulate firm investment by using a sample of elections for which the incumbent governor does not seek re-election; the results for this sample do not differ from their original results.

Important evidence supporting changes in investment around elections being driven by uncertainty, rather than firm or politician manipulation of investment, comes from the literature linking political uncertainty and volatility. Boutchkova, Doshi, Durnev, and Molchanov (2011) find that labor-intensive industries and industries dependent on exports and contract enforcement have higher volatility in times of higher political risk. Biakowski, Gottschalk, and Wisniewski (2008) look at a sample of 27 OECD countries and find higher stock market volatility around national elections; the effect is stronger with narrow margin of victory, change in controlling party, or failure to form a parliamentary majority. Goodell and Vahamaa (2012) use Iowa Electronic Market data and stock market uncertainty, proxied by the VIX, and find that the VIX is higher when the outcome of the presidential election is less certain.

3 Hypothesis Development

In this paper, investment is measured by capital expenditures as a percentage of total assets. By definition, capital expenditures are long-term; the firm expects to receive the cash flows generated by capital expenditures for more than one year. Capital

expenditures can include major investments, like the construction of new plants or facilities. Therefore, there is likely significant research and planning that goes into a capital expense.

A decline in capital expenditures can be observed before an election because elections are predictable. Unlike in countries where a vote of no confidence can bring about an election, in the United States, elections occur on a fixed schedule³. Firms can observe elections and plan, well in advance, capital expenditures around elections. If elections are believed to be a significant source of uncertainty, firms know the timing of elections and can choose to pull back investment right before an election⁴.

A newly elected governor has the ability to influence many state policies that affect firm investment payoffs: minimum wage laws, labor laws generally, mining regulation, access to cheaper financing (green energy bonds), etc. As potential changes in state policies can affect the payoffs of firm investments, an election is a source of political uncertainty. Therefore, firms will reduce investment before an election. If a firm is choosing between a series of projects and the option to defer, in times of uncertainty, the value of the option to defer will be higher. This will cause the firm to defer investment until the uncertainty is resolved.

³Special gubernatorial elections are possible, but rare. Only one occurs in my 24 year sample, in California in 2003. Any other case of a governor resigning resulted in the appointment of a replacement who served until the scheduled election.

⁴These hypotheses can also be derived from a simple model involving a firm choosing between several project options, one of which is the option to defer, included in the Appendix.

The magnitude of the decline in investment before an election should be related to the uncertainty created by an election. If an incumbent is running unopposed, I would not expect the election to have any impact on investment. Likewise, an extremely close election should have a greater impact through an increased level of uncertainty. Therefore, I hypothesize that this decline in investment will be greater for closer elections.

State designation in this study is the state in which a firm is headquartered, as identified by Compustat. A large firm stretching over several states is likely to be affected by multiple gubernatorial races. Therefore, I expect the effect of election uncertainty on investment to be greatest in small firms, which are the most likely to have operations concentrated in the state of headquarters.

In models of investment under uncertainty, the assumption of irreversibility is important to the postponement of investment. If a firm could simply switch costlessly from one project to another after the election, there would be no need to defer investment. Therefore, a firm with more reversible investment should be less likely to defer investment.

If a firm chooses to defer investment until after an election, the option value of deferral is greater than the expected payoff from the project. This option value should be greater for firms with more potential investment. Firms with more potential investment have a greater chance of election results impacting the potential payoffs of these future projects. Therefore, I hypothesize that firms with more potential

investment should have a larger decline in investment before an election.

Longer-term investments should be more likely to be postponed. In a deferral decision, a firm weighs the cash flows forfeited by waiting until after the election to investment against the potential changes in cash flow after the election. Therefore, employment, which is less of a long-term investment than capital expenditures, should be less likely to be postponed.

Politically sensitive firms are also likely to have a larger decline in investment before an election. Several industries are designated “politically sensitive” in the literature (Kostovetsky, 2009): Beer (4), Smoke (5), Guns (26), Gold (27), Mines (28), Coal (29), and Oil (30) (Fama French 49 industry identification is in parentheses). Raw-materials producing industries, particularly the coal mining industry, are among some of the most highly regulated industries at a state-level.

Gulf coast states have the ability to regulate off-shore oil and gas drilling up to 3 miles offshore (9 miles for parts of Florida and Texas)⁵. Recent events in Florida provide a look at how oil industry firms have experienced higher levels of political uncertainty in recent years, as states debate whether off-shore drilling should be allowed. In 2009, the Florida House of Representatives passed a bill to allow off-shore oil drilling, but the bill did not pass the Senate. Since the BP oil spill in 2010, several measures supported by Governor Charlie Crist⁶ to amend the Florida state constitution to ban off-shore drilling have failed. The possibility of a change in

⁵State ownership according to the Submerged Land Act, passed by Congress in 1953.

⁶Charlie Crist served as the governor of Florida from 2007 to 2011.

state-level policy has created significant uncertainty for the oil industry in Florida.

After political uncertainty is resolved, firms should be able to make an investment decision based on the outcome of the election. It is important to remember that firms know who the candidates in these races are well in advance of the election. By the day of the election, firms likely know which investments they will undertake if each candidate wins. Waiting until the election has actually occurred to begin to consider investment decisions makes no sense, given the costs of deferral⁷. Therefore, the post-election increase in investment should follow relatively quickly after the uncertainty is resolved.

For an election in which an incumbent has been re-elected, the election results should resolve most, if not all, of the uncertainty. The governor has already served at least one term in office, and firms know what to expect from him in terms of policies and efficacy in working with the state legislature. However, if a new governor is elected, there should still be some uncertainty on his ability to enact his chosen policies. Therefore, when a new governor is elected, I expect only a partial resolution of uncertainty. Investment should increase somewhat on the election results, but remain lower until uncertainty concerning the new governor is completely resolved.

There are several alternative hypotheses to the idea that the change in investment around elections is caused by political uncertainty. Firms or politicians could be

⁷In deferring investment, firms give up cash flows before the election. Additionally, firms delaying investment may begin to lag behind competitors, particularly those in states not experiencing political uncertainty.

manipulating investment to influence election outcomes. Before a term limit election, the incentives for firms and politicians to manipulate investment are lower than they would be otherwise. In contrast, a term limit election has a higher level of political uncertainty. Therefore, if the decline in investment is greater before a term limit election, this is support for my results being driven by uncertainty, rather than firm or politician manipulation of investment.

4 Data and Variables

4.1 Political Variables

Gubernatorial election data from 1960 to 1988 are available from the Inter-University Consortium for Political and Social Research (ICPSR). Later election data were hand-collected. The definitions for all political variables are in Table 1, and summary statistics for all state-level variables are in Table 2.

Election is a binary variable equal to 1 for a year in which a gubernatorial election occurred for a state. There is one special election in the sample that occurred in California in 2003; the observation is treated as any other election observation. The final sample includes 328 gubernatorial election observations. *Pres election* is a binary variable equal to 1 for a year in which a presidential election occurred. Eight presidential elections are covered by the sample, which runs from 1984 to 2008.

Presidential elections have the potential to create political uncertainty. However,

at most two of the eight presidential elections contained in the sample can be considered close (or the results can be considered unanticipated). Therefore, it is unlikely that presidential elections were a large source of political uncertainty in my sample. Despite this, the effect of presidential elections on investment will be controlled for several ways, including using the occurrence of a presidential election as a treatment in a difference-in-difference-in-difference (DDD) estimation, with Q3 and gubernatorial election as the other treatments. Additionally, the model will be estimated eliminating observations from states with gubernatorial elections that coincide with the presidential election cycle.

Figure 1 shows the average quarterly investment for election and non-election years. The average investment in the third quarter for election year observations is significantly lower than the average investment in Q3 for non-election year observations. Panel B shows the average quarterly investment for election and non-election years after states with gubernatorial elections coinciding with the presidential election have been removed from the sample. The difference in Q3 is larger and significant. Therefore, the decline in investment before gubernatorial elections is not driven by the uncertainty created by presidential elections.

For the whole sample, the party identification of governors was Republican for 49% of the sample and Democrat for 49.7% of the sample (third party candidates held office for 1.3% of the observation years). Election wins are split close to evenly between Democrats and Republicans, 47.9% and 50.9%, respectively. Among elec-

tion observations, 34% of elections result in a party change, 15.6% were changes to Democrats and 17.7% were changes to Republicans. Total wins were 50.9% Republican and 47.9% Democrat. No one party dominates the sample, election wins, or party switches.

Close elections are determined using the average vote differential, the difference in percentage of vote obtained by the winner and second place candidates. Following Julio and Yook (2012), I define *close* as a binary variable equal to 1 if the vote differential (*diff*) for an election is less than the average vote differential for all of the elections in the sample. Using this definition, approximately 60% of election observations are close.⁸ This appropriateness of this definition of close elections is further discussed in the Robustness section.

Binary *yearafter* and *yearafter pres* variables are equal to 1 for the year after a gubernatorial or presidential election occurred, respectively. *Govswitch* is a variable equal to 1 if there is a new governor elected; approximately 50% of year-after observations are also switches in governors. This means that incumbents win approximately 50% of elections.

A binary variable, *termlim*, is equal to 1 for a year in which the incumbent governor is unable to seek re-election due to the term limit law that was in force at the time of the observation. Term limit provisions differ across states; many states cap lifetime

⁸Because such a large number of elections are deemed close using this definition, I also use a tercile cutoff, resulting in approximately 30% of election observations being classified as close; all conclusions remain unchanged with a tercile definition.

terms at two, several states limit only consecutive terms, and others have no term limits. There are 72 term limit elections in the sample (22% of election observations). Additionally, approximately 31% of close and 11% of non-close elections are term limited. Using term limits as an instrumental variable for closeness relies on term limit observations being more likely to be close than non-term limit observations. Figure 3 presents the current term limits enforced by states. Term limit data were hand-collected from each state’s website for the governor’s office⁹.

Fama French 49 industry classification is used for industry identification. Several industries are designated “politically sensitive” in the literature (Kostovetsky, 2009): Beer (4), Smoke (5), Guns (26), Gold (27), Mines (28), Coal (29), and Oil (30). Approximately 7.4% of the sample firms are in a politically sensitive industry.¹⁰

Figure 2 shows the gubernatorial election cycles by state. With the exception of Vermont and New Hampshire, which hold elections every two years, and Rhode Island, which held elections every year until 1994 before switching to a four year cycle, states hold gubernatorial elections every 4 years. Currently, 11 states hold elections in the year of presidential elections, 36 states hold elections in the off-presidential even years, and 5 states hold elections in odd years.

⁹For example, for California, the website gov.ca.gov provides biographical information for all governors, including years of service

¹⁰Data on lobbying, government sales, and the presence of a political director are not used to identify political sensitivity as firms involved in these activities tend to be very large firms, and the effect of gubernatorial elections on investment is not strong for large firms.

A firm's state is the state of headquarters in Compustat. A firm's operations are not limited to their state of headquarters. The state of headquarters may be outdated; operations may have been concentrated in a particular state previously, but have since been relocated. However, unlike the state of operation, a firm's state of headquarters is less of a strategic decision. Operations within that state are regulated by state labor laws and a firm may be eligible for investment incentive programs due to the presence of operations within a state. Because firms are expected to operate in multiple states, the election results should be the strongest in the smallest firms, which are more likely to be concentrated in one state, the state in which the firm is headquartered. Table 3 gives the distribution of firms across states.

4.2 Financial and Economic Variables

Financial data are from Compustat and stock prices and shares outstanding from CRSP. The sample using quarterly financial data runs for 24 years, from 1984 to 2008, as quarterly investment data are not available before 1984. Financial services firms and utilities are excluded from the sample. Observations with missing information were dropped, as were observations with Total Assets equal to or less than 0. Observations with capital expenditures less than 0 are excluded¹¹. There are only a handful of observations with capital expenditures greater than 1.5 times assets; these

¹¹Like the decision to invest, the decision to disinvestment is costly to reverse; a decline in disinvestment is expected before an election. Results for disinvestment, measured by sale of property, plant, and investment, are given separately from investment results.

are excluded as probable data errors. No other attempts are made to trim the data, as the results are expected to be the greatest among firms with high capital expenditures; the greatest pull-back in investment before an election should occur in firms that have the largest level of investment. Only firms with year end in December are included in the sample¹². The final sample includes 216,782 firm-quarter observations.

The dependent variable for most tests is investment, measured by capital expenditures as a percentage of total assets. Other dependent variables used include employment, total number of employees as a percentage of assets, and disinvestment, sale of property, plant, and equipment as a percentage of assets. Financial controls are included in all estimations: market-to-book, long and short term debt scaled by assets, cash flow scaled by assets, and log of market capitalization. All financial variable definitions are in Table 4. Summary statistics for financial variables are in Table 5.

Three measures of economic conditions are included as controls: annual change in state GDP, quarterly state unemployment, and a binary variable equal to 1 if the quarter is identified by NBER as being within a recession. State GDP and unemployment data are from the Bureau of Economic Analysis (bea.gov). For a firm-level measure of uncertainty, I compute a monthly volatility measure equal to the average monthly log of squared daily returns. Definitions for economy controls are in

¹²This is due to the cyclical pattern in quarterly investment, seen in Figure 1. I would expect the same decline in investment before elections for these firms. However, the varied cyclicity would be problematic for a DD estimation, which needs to estimate an effect for each quarter.

Table 1 and summary statistics are in Table 2.

Table 6 presents correlations between change in state GDP, state unemployment, and the election vote differential (*diff*). There is a positive correlation between vote differential and change GDP. Election outcomes are less close when change in GDP is higher. Additionally, there is a negative correlation between unemployment and vote differential. Lower unemployment is associated with a higher vote differential, or less close elections. Taken together, closer elections are related to worse economic conditions in a state. These correlations highlight the potential for reverse causality in a regression of firm investment on close elections.

5 Results

5.1 Election Year Results

I use a difference-in-difference-in-difference (DDD) model to estimate the causal effects of political uncertainty before elections on firm investment. The timing of elections is exogenous; a firm cannot influence the timing of a gubernatorial election. Although a firm initially chooses its state of headquarters, the timing of the gubernatorial election cycle likely has no effect on that decision. Gubernatorial election cycles are staggered across states, and the variation in timing depends largely on when a state was formally recognized as a state and began electing a governor, resulting in both time-series and cross-sectional variation in gubernatorial elections. Similarly,

the timing of presidential elections is exogenous; a presidential election variable is included to isolate the effect of gubernatorial elections. The DDD model, which estimates treatment effects for quarter 3, gubernatorial election year, and presidential election year, is:

$$\begin{aligned}
 investment = & \beta_0 + \beta_1 election + \beta_2 q3 + \beta_3 preselection + \beta_4 (election)(q3) \\
 & + \beta_5 (preselection)(election) + \beta_6 (preselection)(q3) \\
 & + \beta_7 (preselection)(election)(q3) + \delta controls + u
 \end{aligned} \tag{1}$$

Controls include firm controls for long-term and short-term debt, market-to-book ratio, cash flow, and size, as well as change in state GDP, state unemployment, a binary recession variable equal to 1 if the quarter was defined by NBER as being in a recession, and state, year, industry, and quarter fixed effects.

Table 7 presents the results from the DDD estimation. The variable of interest is the interaction between *election* and the quarter indicator variable, which estimates the treatment effect of a quarter in an election year when compared with the same quarter in non-election years. The quarter used for the interaction term varies across the columns. As can be seen, the effect is limited to the third quarter, the quarter directly preceding the election. Since the dependent variable is capital expenditures as a percentage of assets, the interpretation of the coefficients is a basis point change. To compare the magnitude of effects across samples, I will refer to this basis point change as a percent of the rate of investment (capital expenditures as a percentage of assets). The whole sample has an average investment rate of 2.014. Therefore,

the estimated basis point change in Q3, 0.099, represents a 4.9% decline in that rate of investment. The investment of firms in states with a gubernatorial election is approximately 4.9% lower in the third quarter relative to the investment of firms in states without a gubernatorial election.¹³

Although this paper focuses on the effects of gubernatorial elections, it is interesting to note that presidential elections also have a negative effect on investment. The size of the presidential effect is relatively small, compared to the magnitude of the decline in investment before elections for heads of government estimated in international samples. This sample covers only eight presidential elections, between 1984 and 2008; at most, two of these elections can be considered close. Unlike the gubernatorial election effect, which is concentrated in the third quarter, the presidential election effect is strongest in the first quarter. It may be that, if there is any uncertainty in recent presidential elections, it comes from the party primaries. More than half of state-level primaries for presidential elections are held in the first quarter. Usually, an incumbent president automatically earns his party's bid, but a challenger is almost always determined in the first quarter of an election year. For elections without an incumbent presidential candidate, both contenders are usually determined during this time. Although the exact dates and order of primaries varies from year to year, uncertainty is resolved in the first and second quarters of presidential election years.

The effect of political uncertainty on investment is lower than the effect estimated

¹³When the presidential election variables and interaction terms are excluded, the estimated coefficient is slightly larger, -0.0951, with a standard error of 0.0395; the conclusions remain unchanged.

using international samples. Julio and Yook (2012) find a 4.8% decline in annual pre-election investment in an international sample. As the effect estimated here is a 4.9% decline in only Q3, the effect is approximately one-fourth the size of the effect seen in Julio and Yook (2012). The magnitude is likely smaller due to two reasons. First, the U.S. is a relatively stable country, politically, compared with countries included in Julio and Yook's (2012) sample: Argentina, Columbia, Malaysia, Pakistan, and Venezuela. In the U.S., Democrats and Republicans are much closer together on the political ideology spectrum than are parties in other countries. While the election of a Democratic governor may result in an increase in the minimum wage, it is unlikely to result in a seizure of assets. Even among more western, industrialized countries, the U.S. is relatively politically stable; in May, 2012, France elected a member of the Socialist Party as president, replacing a president from a party considered center-right (liberally conservative). Additionally, gubernatorial elections are state, rather than federal, elections. Julio and Yook (2012) look at federal elections, which may create more uncertainty than state elections. The uncertainty created by federal elections is also more likely than uncertainty from state elections to influence the decisions of larger firms, leading to a stronger effect on investment for the whole sample.

Table 8 presents only the interaction between *election* and *Q3* from estimating equation 1 on size and potential investment quintiles, with size measured first by total assets and then by total employees and potential investment measured by market-to-book ratio. As expected, the decline in investment is significantly greater in the

smallest size quintile than in the largest size quintile, using both total assets and employees as a measure of size. The smallest firms are most likely to be concentrated in their state of headquarters and, therefore, most strongly affected by the uncertainty surrounding the gubernatorial election in that state. Among small firms, the investment of firms in states with a gubernatorial election in the following quarter is approximately 15% to 18.5% lower than the investment of firms in states without an upcoming gubernatorial election. The decline in investment before elections is significantly greater for the largest market-to-book quintile than the decline in investment for the smallest quintile. The investment of high market-to-book firms in states with a gubernatorial election is approximately 14.5% lower than the investment of high market-to-book firms in states without a gubernatorial election.¹⁴

Table 9 presents the coefficients estimated on *election*Q3* for asset specificity and non-specificity quintiles, using measures from Strömberg (2000). The decline in investment before elections is greater for the highest quintile of asset specificity, measured by building at cost, than the decline for the lowest quintile. The difference is not quite statistically significant (t-statistic of 1.61). There are two measures of asset non-specificity, current assets and land and improvement at cost. For both measures of asset non-specificity, the decline in investment in the lowest quintile is significantly greater than the decline in the highest quintile. Post-election disinvestment would be the most expensive for firms with high asset specificity. Taken together, the results

¹⁴When the sample is double sorted on both size and potential investment, the size and potential investment effects exist separately.

point to higher asset specificity resulting in a greater effect of political uncertainty on investment.

Table 10 presents estimates for the coefficients estimated on $election*Q3$ for politically sensitive and insensitive industries. The decline in investment for politically sensitive firms is significantly larger than the decline for politically insensitive firms. Additionally, two politically sensitive industries that have relatively more state-level regulation than other industries, mining and oil, are considered separately. The decline in investment before elections is roughly 28% and 13% for mining and oil, respectively.

Table 11 presents the coefficient estimates for $election*Q3$ using employment, total employees as a percentage of assets, as the dependent variable. When considering whether to postpone investment, firms must take into considering cash flows forfeited by postponement against lost cash flows after the election if the results are unfavorable. Employment, as a more short-term investment than capital expenditures, is less likely to be deferred. Although the coefficient estimated on $election*Q3$ is negative for all three samples considered, it is only significant for politically sensitive industries. Politically sensitive industries reduce employment as a percentage of assets approximately 5.5% before elections. When compared with the reduction in capital expenditures for these firms, nearly 15%, this suggests that short-term investments, like employment, are less likely to be deferred than longer-term investments like capital expenditures.

5.1.1 The Timing of the Decline in Investment

In each of these specifications, the decline in investment before elections is consistently limited to Q3, the quarter directly preceding the election. In deferring an investment until after an election has resolved political uncertainty, firms wait to invest until project cash flows are more certain. However, there are costs to deferral. Delaying investment results in a forfeiture of payoffs today. A firm may begin to lag behind its competitors, particularly firms headquartered in other states that may not be experiencing political uncertainty caused by an election. Given these costs, any delay in investment should occur right before the election to minimize the length of time investment activity is put on hold.

Gubernatorial elections occur in the first or second week of November. When looking at quarterly data, this puts the election in the middle of the fourth quarter. The greatest decline in investment should then exist in the third quarter, while the post-election increase in investment should be strongest in the first quarter of the following year. It is difficult to predict if an effect will exist in the fourth quarter; investment should be postponed until after the election, but post-election investment may begin immediately following the election. It is not obvious which effect should dominate.

The decline in investment need not be limited to the third quarter of election years. If an election is sufficiently uncertain, the benefits to waiting as long as six months to invest may outweigh the costs of deferral. Therefore, earlier deferral of investment,

deferral in the second quarter, may exist for very close elections, particularly in small firms and politically sensitive firms, the groups of firms in which the results are expected to be concentrated. However, there does not seem to be an effect earlier than Q3 even for close elections (results seen in Table 20).

I believe that the reason the decline in investment is limited to Q3 is that not all elections are close. Although there is some uncertainty in most elections (up until the day of the election, a candidate can say something controversial that dramatically alters the election outcome), the median vote differential for the sample is 12.8%. This means that for half of all elections, the winner won by at least 12.8% of the vote. Additionally, my definition of closeness is not capturing extremely close elections. I following the existing literature in defining close elections; if the vote differential, the difference in percentage vote received by the winner and second place candidate, of an election is less than the average vote differential for the sample, the election is close (Julio and Yook, 2012). In my sample, an election is defined as a close election if the vote differential is less than 16.4%. This measure results in approximately 60% of election observations being classified as “close.”

Therefore, I examine a narrower definition of close, using a tercile, rather than a mean cutoff; if the vote differential for an election is less than 7.8% (the tercile cutoff), the election is classified as close. Using this closeness measure, I estimate a 7.3% decline investment in Q2 and an additional 5% decline in investment in Q3

before close elections¹⁵, resulting in a composite effect of a 9.9% decline in investment in Q3¹⁶. The decline in investment in Q2 is larger for politically sensitive and small firms, approximately 22% and 26%, respectively. Therefore, the effect of political uncertainty created by gubernatorial elections extends earlier than Q3 for close elections, and the results are particularly strong in subsamples that are expected to be the most affected by political uncertainty.

5.2 Year After Election Results

To look at year-after election effects on investment, I estimate a DDD equation with *yearafter*, *yearafter pres*, and *q1* as treatments:

$$\begin{aligned} investment = & \beta_0 + \beta_1 yearafter + \beta_2 q1 + \beta_3 yearafterpres + \beta_4 (yearafter)(q1) \\ & + \beta_5 (yearafter)(yearafterpres) + \beta_6 (yearafterpres)(q1) \\ & + \beta_7 (yearafter)(yearafterpres)(q1) + \delta controls + u \end{aligned} \quad (2)$$

The variable of interest is the interaction between *yearafter* and *q1*, which estimates the treatment effect of the first quarter of the year after an election when compared with first quarters of other years. Results are presented in Table 12. In the first

¹⁵Results available upon request.

¹⁶When estimating the effect of close elections, I limit the sample to only election observations because a difference-in-difference estimation cannot include both *election* and *close* (all close elections are close elections). Therefore, the coefficient estimated is the effect of close elections above the effect already estimated for elections. There is a composite effect for Q3 because there was a decline in investment in Q3 before elections. Because all elections are close elections, I add the effect of elections on investment in Q3 to the effect of close elections on investment in Q3 for the total Q3 effect.

column, which presents results for the entire sample, the coefficient on *yearafter*q1* is positive and significant; the investment of firms in states in the year following a gubernatorial election is 3.6% higher than the investment of firms in states that did not have a gubernatorial election in the previous year.

Despite the higher investment in the first quarter, the coefficient estimated on *yearafter*, or the effect estimated for the entire year after the election once the Q1 effect is estimated, is negative. While there is an increase in investment in Q1, there is a decline in the overall year investment relative to the investment in other years. This suggests that the election partially resolves political uncertainty, resulting in the Q1 increase, but that some uncertainty still remains, causing a lower investment in the whole year after the election.

To investigate this further, I partition the sample into elections won by new governors (*govswitch* = 1) and elections won by incumbent governors (*govswitch* = 0). In the second column, elections won by new governors, there is an increase in investment in Q1 but a larger, negative coefficient on *yearafter*. This suggests that when a new governor is elected, the election resolves some uncertainty, but uncertainty remains, likely about how successful the governor is going to be in enacting his policies and working with the state legislature. In contrast, the coefficients on *yearafter* and *yearafter*Q1* are positive, but not significant, if an incumbent governor wins. The lack of significance is likely due to the fact that most incumbent governors win. There is then little uncertainty preceding these elections to cause a decline in investment.

When the sample is limited to close elections won by incumbent governors, the final column, there is a large increase in investment in Q1 that is not offset by the *yearafter* term. Since firms have already seen an incumbent governor in action, uncertainty is resolved the day of the election.

This interpretation is supported by volatility results seen in Table 13. Monthly average volatility is higher for year-after election observations in which a new governor is elected. This difference is statistically significant for year-after observations following a close election. Therefore, if a new governor is elected, uncertainty is higher than if an incumbent governor is re-elected. The higher volatility is limited to the first few months; the difference in volatility between the two samples disappears by April. During this time, firms are able to observe and evaluate new governors, and form expectations about their abilities.

The year after election results are quite different from those seen in Julio and Yook (2012), who find an increase in investment in the year following the election roughly corresponding to the size of the pre-election decrease. The differences in results are likely due to differences between an international and domestic sample. Julio and Yook's (2012) sample is approximately 75% parliamentary and hybrid systems and 25% presidential systems. In a presidential system, the elected governor (president) must work with the state legislature (Congress) to enact policies. The success of the governor in enacting his policies depends on the makeup of the state legislature and how well he works with the legislators. In contrast, in a parliamentary system, a ma-

jority of parliament elects the leader. Therefore, a politician elected by the parliament automatically has parliamentary majority, and is better able to enact his policies (this is widely considered a strength of parliamentary systems over presidential systems). Therefore, in a parliamentary system, an election resolves political uncertainty, while in a presidential system, uncertainty may linger into the year following the election.

5.3 Testing Against Alternative Hypotheses

Gubernatorial data provide a unique opportunity to test whether changes in investment around elections are caused by political uncertainty or an alternate cause. Table 14 presents a summary of alternative explanations for the change in investment around elections. When comparing the predicted effects of different hypotheses in Panel B, only hypothesis 1 (the decline in investment before elections is driven by uncertainty) and hypothesis 2 (governor's policies supporting investment are weakened before elections, predict a decline in investment before elections and a greater decline in investment before term limit elections). Therefore, I can test against hypotheses 3 and 4a. through 4d. by estimating a DDD equation using *termlim* as the treatment:

$$\begin{aligned}
 investment = & \beta_0 + \beta_1 termlim + \beta_2 q3 + \beta_3 preselection + \beta_4 (termlim)(q3) \\
 & + \beta_5 (preselection)(q3) + \beta_6 (termlim)(preselection)(q3) \\
 & + \delta controls + u
 \end{aligned} \tag{3}$$

The DDD is estimated on the whole sample and a sample of only close election years. The effect of close elections must be controlled for, since term limit elections are more

likely to be close elections. Limiting the sample to only close elections effectively measures the effect of a binding term limit in the quarter before a close election by comparing the investment of firms headquartered in states with a term-limited, close election against the investment of firms headquartered in states with only a close election. Results can be seen in Table 15.

When the sample is limited to close elections, the coefficient estimated for the interaction of *termlim* and *Q3* is negative and significant for politically sensitive firms, a subsample in which the effect should be the strongest. Therefore, there is a greater decline in investment before a term limit election, above and beyond the decline predicted for close elections. This is evidence in favor of the decline in pre-election investment being driven by political uncertainty.

I am not, however, able to rule out a lame duck effect using this test (hypothesis 2 in Table 14). Governors may lose power as an election grows closer (a lame duck effect), resulting in a decline in the programs enacted to support investment. In the absence of these programs, investment dips right before an election. After the election, whether the governor is re-elected or replaced, the investment supporting programs are re-initiated, and investment increases.

To empirically test against hypotheses like this is difficult. Data on state-level subsidies to firms, one way in which governors could support firm-level investment in a state, is available from the BEA. There is no significant decline in either the

level of or change in subsidy payments in the year of an election¹⁷. However, there are numerous other ways a governor could decrease support from firm investment. This withdrawal of support could be as intangible as a change in rhetoric. In order to completely rule out this hypothesis, I would need to determine all possible ways a governor could pull-back in his support of investment and show that there is no change before an election.

Additional evidence against this hypothesis comes from existing literature. Mikesell (1978) presents an opposing view of changes in policy during a gubernatorial cycle, focusing on changes in state tax law. He notes that voters have short memories. The best time to change policy is at the beginning of the cycle, right after the governor is elected. Governors, and politicians generally, avoid any changes in policy right before the election. The status quo is maintained throughout the final year of a governor's cycle. Therefore, if the governor has supported investment, he will continue to do so through the end of the election cycle. According to the existing literature, it is unlikely that a change in state policy is driving the results.

Additionally, looking at measures of firm-level uncertainty around elections supports the idea that firms are affected by political uncertainty caused by gubernatorial elections. Figure 4 presents average monthly volatility before elections. In July, August, and September, the end of Q3 and beginning of Q4, volatility of election years is significantly higher than non-election years. The timing of the increased level of

¹⁷Results available on request

uncertainty corresponds directly with the decline in investment.

Finally, results from a DDD estimation using disinvestment (sale of property, plant, and equipment) as the dependent variable are presented in Table 16. Disinvestment, like investment, is a costly-to-reverse decision. Therefore, firms should postpone disinvestment in times of uncertainty. Although the results are weaker than those seen for investment, likely because disinvestment is a rarer occurrence than investment, there is a decline in pre-election and increase in post-election disinvestment for small firms and an increase in post-election disinvestment for politically sensitive firms. The results support the story that disinvestment, like investment, is postponed until after political uncertainty is resolved by elections. It is difficult to tell a story in which a lame duck governor affects firm disinvestment decisions. Taken together, the existing literature and volatility and disinvestment results support uncertainty as the cause of changes in investment around elections, rather than lower gubernatorial support for investment.

5.4 Proxy Quality

Each DDD model estimated in this paper regresses investment, capital expenditures scaled by total assets, on an election variable and controls, including Tobin's Q . Erickson and Whited (2000) discuss biases caused by mismeasurement of Q . It is plausible that the uncertainty associated with an election could be priced into the market-to-book ratio, resulting in an inaccurate estimate of the coefficient on the election

variable. Therefore, I use the signs test in Erickson and Whited (2005) to ensure that the sign of the estimated effect is correct. Proxy quality thresholds are reported in Table 17. The proxy quality thresholds suggest that, unless the mismeasurement of Q is correlated with the timing of gubernatorial elections, proxy quality is not a problem for this specification; the minimum correlation needed between measured Q and actual Q for the estimated coefficients to be unbiased is close to 0.

6 Robustness

6.1 Measuring Close Elections

6.1.1 Distribution of Close Elections

If one state, geographic region, year, or election cycle has a disproportionately high number of close elections, my results may reflect the effect of any of those variables rather than the effect of close elections on investment. Table 18 provides the occurrence of close elections by election cycle, while Figure 5 shows close elections by year. Close elections seem fairly evenly distributed across years and election cycles. I also examined the incidence of close elections across states and geographic regions¹⁸. As there is no obvious clustering of close elections along any of these dimensions, my measure of close elections should only be capturing the effect of increased uncertainty before close elections on investment.

¹⁸Figures available upon request.

6.1.2 Endogeneity and Close Elections

The decline in investment before an election is expected to be greater for closer elections. Because all close observations are also election observations, I am not able to estimate an interaction between *close* and *election*. As I cannot estimate a DDDD including both *close* and *election* as treatments, I cannot completely differentiate between the two effects. Therefore, I limit the sample to only election years and estimate a DDD with *close*, *pres election*, and *q3* as treatments:

$$\begin{aligned}
 investment = & \beta_0 + \beta_1 close + \beta_2 q3 + \beta_3 preselection + \beta_4 (close)(q3) \\
 & + \beta_5 (preselection)(close) + \beta_6 (preselection)(q3) \\
 & + \beta_7 (preselection)(close)(q3) + \delta controls + u
 \end{aligned} \tag{4}$$

The interpretation of the coefficient on *close***q3* should be any change in investment above that already measured for all elections – the added effect of close elections.

While the timing of elections is exogenous, the closeness of the election may be endogenous. Poor economic conditions in a state, which includes lower firm investment, may result in a closer election as the voters attempt to replace the governor. This idea is supported by a negative correlation between unemployment and vote differential and a positive correlation between change in state GDP and vote differential (seen in Table 6).

Therefore, I use term limits as an IV to address the endogeneity in close elections. Term limits prevent an incumbent governor from seeking re-election. If an election does not have an incumbent, the election is likely to be closer, as incumbents

overwhelmingly win re-election (Cover, 1977) (summary statistics seen in Table 2). Firms cannot manipulate term limits. Therefore, elections in which an incumbent is prevented from seeking re-election are more likely to be close elections, and the presence of term limits is exogenous.

Table 19 presents the first stage of the IV procedure. Term limit, the IV, is strongly significant¹⁹. The presence of term limits increases the probability of a close election, as expected. State averages of financial variables are included because they are also included in the second stage of the IV estimation; they are not expected to be meaningful. However, short-term debt is negatively associated with election closeness. A decline in debt may be related to a decline in investment and proxy for a poor economy, resulting in a closer election.

Table 20 includes estimations of equation 4 for *close* along with a closeness measure fitted from the first stage of the IV in Table 19. Using a closeness variable without term limit as an instrumental variable results in a coefficient estimate that is about one-third the size of the coefficient obtained using the IV. The effect is significant for the smallest firms, a subsample in which the results are expected to be particularly strong. For small firms, close elections has an extreme effect on investment. The coefficient estimate relative to the average capital expenditures for the sample suggests the investment of small firms before close elections is almost 40% lower than the investment of small firms before other elections.

¹⁹The F-statistic for a regression of *close* on *termlim* is 23, alleviating concerns that the IV is weak.

6.1.3 Ex-post Definition of Closeness

Close elections are defined as a binary variable equal to 1 for elections in which the average vote differential, the percentage of vote obtained by the first and second place candidates, is less than the average vote differential for the elections in the sample (Julio and Yook, 2012). This measure of election closeness is an ex-post measure. I was unable to find an adequate ex-ante measure of uncertainty for the entire sample.²⁰

Although poll data were not available for the entire sample, I evaluate the appropriateness of using election results as a measure of closeness on a smaller subset of poll data. I hand-collected poll data on 1076 polls for 53 elections that occurred between 2007 and 2010 from RealClearPolitics.com. The sample used for the analyses in my paper thus far runs from 1984 to 2008 and covers 328 elections. The polls are conducted by a variety of both national and local organizations; the most common are Rasmussen Reports, Public Policy Polling (PPP), and Survey USA.

Table 21 provides a breakdown of the number of polls for each quarter leading up to elections. I focus on polls from Q2 and Q3 of an election year, with the idea that

²⁰Poll data covering all gubernatorial elections only exists for the past four years. Only larger states and states with more interesting, closer elections have poll data available before that period. Total donations to a candidate, proportion of total fundraising received by a candidate, and amount of money spent during a campaign were also considered as potential measures of election closeness. However, these data are only available for the entire year, after an election. As I am unable to find fundraising as of a certain date before an election, these measures suffer the same drawbacks as using election results.

candidates may still be entering races and firming up platforms in the first quarter. Polls from the fourth quarter are not used as, like election results, they are an ex-post measure of uncertainty when looking at investment in the third quarter. Polls from the second and third quarters constitute approximately 53% of the polls included in the sample.

To measure closeness using poll data, I average the difference in percentage vote received for the top two candidates in each poll for each gubernatorial election. An election is deemed close if its vote differential is less than the mean vote differential for the sample. There is an 0.88 correlation between average poll margins and election results.

Results of an estimation of equation 4 using close defined from poll data and close defined from election results can be seen in Table 22. The results are virtually indistinguishable. Combined with the high correlation between election results and poll margins, closeness defined from election data appears to be a fair measure of ex-ante election closeness.

6.2 Other Robustness

The DDD procedure should differentiate between the effect of gubernatorial election uncertainty and the effect of presidential election uncertainty. However, given that election cycles vary across states, I estimate the election year DDD (equation 1) across samples of states with different gubernatorial election cycles. I first omit those

states with gubernatorial elections coinciding with presidential elections. Then, only a sample of states with off-presidential even year gubernatorial elections is used. Finally, I limit the sample to firms with odd year gubernatorial elections. Because the number of firms in these states is so small, I lump together all five odd year election cycle states rather than estimating the two cycles separately.

Table 23 presents the main DDD regression estimating the effect of an election on the third quarter of investment (equation 1) on these samples. There is a decline in investment for the third quarter of the election year. The magnitude of the coefficients are similar, although the coefficient for odd year election cycle states is not significant, likely due to the small sample size. The results are consistent with the estimates for the entire sample. It is unlikely the results for the whole sample are driven by any individual gubernatorial election cycle.

7 Conclusion and Future Work

Using a sample of U.S. firms, I find the first evidence of a decline in firm investment under the political uncertainty caused by elections within the U.S. Average monthly volatility of firms headquartered in states with an election is higher than the volatility of firms headquartered in non-election states, directly tying the decline in investment to a rise in uncertainty. The decline in investment is greater for smaller firms, politically sensitive firms, and firms with more potential investments and higher levels of asset specificity. I find a small decline in employment before elections, suggesting

that more short-term investments (like employment) are less likely to be postponed.

I find an increase in investment directly following elections. After a new governor is elected, there is an increase in investment in Q1, but the investment for the whole year after the election is lower than the investment in other years. This suggests that, although some uncertainty is resolved the day of the election, some uncertainty about the governor's efficacy to enact his chosen policies remains. In contrast, there is a large increase in investment after the re-election of an incumbent and no significant year-after effect. All of the political uncertainty created by an election seems to be resolved by the election of an incumbent; firms have already observed and evaluated his abilities. This interpretation is supported by higher firm volatility in states where a new governor is elected when compared with the volatility of firms in states that have re-elected an incumbent.

The changes in investment after gubernatorial elections in the U.S. is more complex than those seen in international samples (Julio and Yook, 2012). This is likely because the U.S. has a presidential system. Once a governor (president) has been elected, his ability to pass his favored legislation depends on his ability to work with the state legislature (Congress). In contrast, nearly 75% of international systems are parliamentary; by design, the elected head of government has parliamentary majority when elected, which makes passing legislation easier. These differences highlight the importance of a study of political uncertainty using all domestic firms.

Finally, I use term limits as an instrumental variable for election closeness and

to test against alternative hypotheses. Election closeness is potentially endogenous. Poor economic conditions in a state, including lower firm investment, can lead to a closer gubernatorial elections. The higher level of uncertainty created by a closer election can also result in a larger decline in investment. When using term limits as an IV for election closeness, I estimate an effect roughly three times larger than is estimated using an endogenous closeness measure.

I exploit term limits, which change incentives to manipulate investment, to test against alternative hypotheses of politician and firm manipulation of investment before elections. I also consider a new alternative hypothesis, that governors' ability to support firm investment is weakened before elections. Using pre-election volatility, results in previous literature, and an analysis of disinvestment, I provide evidence against this hypothesis.

In addition to using capital expenditures as a measurement of investment, I also look at changes in employment and disinvestment around elections. A logical continuation of this study would include looking at different types of firm investment, including R&D expenditures, during times of higher political uncertainty. Additionally, the incidence of lower investment before elections raises the question of what else happens concurrently in a firm. Cash may be hoarded as a result of a temporary pull-back in investment and higher level of uncertainty. Costly issuances may be postponed with investments. Other irreversible or costly-to-reverse decisions, such as payouts, may also be postponed.

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Appendix

There are three time periods, time 0, time 1, and time 2. The firm has a choice between investing in project A or project B at time 0 or deferring investment until time 1. The firm pays 1 to invest in either project A or B, and the discount rate is 0. If the firm invests in project i at time 0, the project pays $\alpha_i P_{i1}$ at time 1 and $\alpha_i P_{i2}$ at time 2 where $\mathbb{E}_0[\alpha_i] = 1$. If the firm defers the investment decision to time 1, it forfeits the payment at time 1. I assume that $P_{i1} + P_{i2} > 1 \forall i \in \{A, B\}$ to ensure that the expected NPV at time 0 is positive for both projects. Without loss of generality, I assume that $P_{A2} > P_{B2}$.

Information about the payoffs of the two projects is released at time 1. For project i , $\alpha_i = 1 \pm \epsilon_i$ where $\epsilon_i > 0$ and $\alpha_i > 1$ with probability $\frac{1}{2}$. At time 0, the firm knows the magnitude of ϵ but does not know whether ϵ will be positive or negative for either project. The “news draw” – whether $\alpha > 1$ for either project – is independent for each project. Just as a firm can observe an upcoming election, the firm knows that news will be released in time 1. It is not necessary to think of time 2 as a terminal point after which the firm ceases to exist. Rather, if no pertinent information is released after time 1, the payoffs in time 2 can constitute a NPV of all future cash flows.

Note that if there is no uncertainty – if the “news draw” does not exist – the firm has no incentive to postpone investment. The firm knows in time 0 the expected payoffs of the two projects and will make an investment decision. Therefore, firms will reduce investment before an election.

At time 0, the firm maximizes the expected value of choosing between project A, project B, and deferring investment to time 1. The expected value of deferring investment to time 1 is:

$$\mathbb{E}_0[D] = \frac{1}{4} \sum_{\alpha_A, \alpha_B} \max(\alpha_A P_{A2} - 1, \alpha_B P_{B2} - 1) \quad (1)$$

Assume:

$$\frac{(1 + \epsilon)}{(1 - \epsilon)} > \frac{P_{A2}}{P_{B2}} \quad (2)$$

Therefore, for a “bad news” draw for project A ($\epsilon_A < 0$) and a “good news” draw for project B ($\epsilon_B > 0$), project B is preferred to project A. Although project A is expected in time 0 to be better than project B, there is an outcome in which project B is better than project A.

Therefore, $\mathbb{E}_0[D]$ becomes,

$$\mathbb{E}_0[D] = -1 + \frac{1}{4}[2P_{A2} + (1 + \epsilon)(P_{A2} + P_{B2})] \quad (3)$$

The expectation of the payoffs of project A (or B) are:

$$\mathbb{E}_0[A] = -1 + \alpha_A P_{A1} + \alpha_A P_{A2} = -1 + P_{A1} + P_{A2} \quad (4)$$

The firm’s decision in time 1 is then,

$$\max_{A,B,D} \left(-1 + P_{A1} + P_{A2}, -1 + P_{B1} + P_{B2}, -1 + \frac{1}{4}[2P_{A2} + (1 + \epsilon)(P_{A2} + P_{B2})] \right) \quad (5)$$

The point at which the firm is indifferent between deferring and investing in Project A in time 1 is,

$$\epsilon = \frac{4P_{A1} + P_{A2} - P_{B2}}{(P_{A2} + P_{B2})} \quad (6)$$

Equation 6 gives a threshold for ϵ ; if the magnitude of the size of the change in the payoffs, ϵ , falls below this threshold, the firm will not defer investment to time 1. The reduction in investment before an election should be greater for more uncertain elections.

In equation 6, ϵ is increasing in P_{A1} ; if the first period payment of the optimal project in time 1 is large enough, the firm will choose to invest in time 0. Any projects that have sufficient payments after the uncertainty is to be resolved are more likely to be postponed. Longer-term investments are more likely to be deferred before an election.

Assume a third project, project C is available to the firm. A firm must now choose between investing in projects A, B, or C in time 0 or defer investment to time 1. Assume $P_{A2} > P_{B2} > P_{C2}$. Again, if the firm is going to invest in time 0, it will choose to invest in project A; the payoffs for project A are given in equation 4. The firm will only switch if the “news draw” for project A is bad (if ϵ is negative) and if the “news draw” for either B or C is good. Assume,

$$\frac{(1 + \epsilon)}{(1 - \epsilon)} > \frac{P_{A2}}{P_{B2}} \quad (7)$$

so that there is an outcome in which project C would be preferred to project B.

Therefore, the expected payoff for deferral is:

$$\mathbb{E}_0[D] = -1 + \frac{1}{2}(1 + \epsilon)P_{A2} + \frac{1}{4}(1 + \epsilon)P_{B2} + \frac{1}{8}(1 + \epsilon)P_{C2} + \frac{1}{8}(1 - \epsilon)P_{A2} \quad (8)$$

Comparing equation 3, the value of deferral where only two projects are available, with equation 8, the value of deferral where three projects are available, the deferral

value is greater where there are three projects. There is a 1 in 8 chance that project C becomes more valuable than project A, causing the value of deferral to rise. Therefore, because the value of deferral in both cases is weighed against the payoffs of project A, there is a higher likelihood of deferral when more projects are available. Firms with more potential investments are more likely to defer investment.

Thus far, I have assumed that investments are irreversible (Bernanke, 1983). However, it is more realistic to assume that investments are reversible for cost λ . If a firm chooses to invest in project A at time 0, it receives $\alpha_A P_{A1}$ at time 1, and can elect to pay λ to switch to project B. The expected value of deferral is:

$$\mathbb{E}_0[D] = -1 + \frac{1}{4}(1 + \epsilon)P_{B2} + \frac{1}{4}(1 - \epsilon)P_{A2} + \frac{1}{2}(1 + \epsilon)P_{A2} \quad (9)$$

The expected value of investing in project A at time 1 is:

$$\mathbb{E}_0[A] = -1 + \frac{1}{4}(-\lambda(1 + \epsilon)P_{B2}) + \frac{1}{4}(1 - \epsilon)P_{A2} + \frac{1}{2}(1 + \epsilon)P_{A2} \quad (10)$$

Solving for λ ,

$$\lambda = 4P_{A1} \quad (11)$$

In other words, investing in project A guarantees a payment in time 1, P_{A1} , but risks a 1 in 4 chance of having to pay λ in time 2 to switch to project B. The cheaper λ is, the cheaper switching between projects is, the more likely a firm is to not defer investment. More reversible investments will have less of a decline before an election than less reversible investments.

In this model, after the uncertainty is resolved, the firm will choose between

Project A and Project B. If an election resolves all political uncertainty, I expect that, directly after the election, firms will make investment decisions. However, some uncertainty may remain even after the election results are known. If a new governor is elected, firms may wait to see how effective he is at working with the legislature and enacting his chosen policies. In contrast, if an incumbent governor is re-elected, firms have seen his abilities previously; political uncertainty is expected to be resolved if an incumbent governor is re-elected. In the case of the election of a new governor, this model is still applicable, but must be thought of in two stages. There are two events that resolve political uncertainty: first, the election of the new governor, and, second, how effective he is in his first few months in office. All predictions from this model hold for both events.

Figure 1: Average Quarterly Investment - Election and Non-election Years

Figure 1 shows the average quarterly investment for election and non-election years for a sample from 1984 to 2008. Investment is capital expenditures as a percentage of total assets. The dashed lines are 90% confidence intervals around the means.

Table 1: Political and Economic Variable Definitions

Variable	Variable Definition
Political Variables	
election	binary variable equal to 1 if a gubernatorial election occurred in that state in that year
close	binary variable equal to 1 if the vote differential (difference between the percentage of votes obtained by the first and second place candidate) is below the sample average vote differential
yearafter	binary variable equal to 1 the year after a gubernatorial election occurred in that state
pres. election	binary variable equal to 1 if a presidential election occurred in that year
yearafter pres.	binary variable equal to 1 if a presidential election occurred in the previous year
termlim	binary variable equal to 1 if the incumbent governor is prevented from seeking re-election by term limits
diff	the vote differential (margin of victory in percentage of vote) for an election
dem	a binary variable equal to 1 if the governor for that state and year identifies as a Democrat
rep	a binary variable equal to 1 if the governor for that state and year identifies as a Republican
other	a binary variable equal to 1 if the governor for that state and year identifies with a 3rd party
party switch	a binary variable equal to 1 if the winner of the election belongs to a different political party than the preceding governor
switch2rep	a binary variable equal to 1 if the winner of the election is a Republican and the preceding governor belonged to a different political party
switch2dem	a binary variable equal to 1 if the winner of the election is a Democrat and the preceding governor belonged to a different political party
repwin	a binary variable equal to 1 if the winner of the election is a Republican
demwin	a binary variable equal to 1 if the winner of the election is a Democrat
govswitch	a binary variable equal to 1 if the governor from the previous year is not the same as the current governor
Economic Variables	
Δ GDP	annual percentage change in state GDP
unemployment	quarterly state unemployment rate
recession	a binary variable equal to 1 for a quarter within an NBER-defined recession

Table 1 presents the definitions for all political variables and economic controls. *ChangeGDP* and *unemp* are from the Bureau of Economic Analysis (bea.gov). Election data from 1984 to 1988 are from the Inter-University Consortium for Political and Social Research (ICPSR). Later election data, party identification of governors, governor switches, and term limit data were hand-collected. The party identification of the governor is the party of the governor who held office for the majority of the year. If a governor is elected in November, inauguration is held in the following January or February. The party of the following year will be the newly elected governor's party, while the party of the year of the election will be the party of the previous governor. If a governor resigns in the middle of a term, he is typically replaced by a member of his own party to serve out the term. Following a resignation, a member of the opposing party was appointed only 3 times in the sample; all of these appointments served for fewer than 12 weeks. Therefore, the party identification of these years would be for the party of the previous governor, who served for the majority of the year.

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Variable	min	median	mean	max	sd	# of obs.
diff	0.168	0.278	0.304	0.648	0.111	133
party change	0	0	0.196	1	0.398	133
switch2dem	0	0	0.113	1	0.318	133
switch2rep	0	0	0.083	1	0.276	133
Term Limit Observations Only (termlim = 1)						
close	0	1	0.594	1	0.492	72
diff	5E-5	0.128	0.166	0.648	0.139	72
party change	0	0	0.342	1	0.475	72
switch2dem	0	0	0.156	1	0.363	72
switch2rep	0	0	0.177	1	0.382	72
Year-after Observations Only (yearafter = 1)						
unemp (annual %)	2.275	5.050	5.230	13.220	1.601	321
Δ GDP (annual %)	-1.167	5.174	5.299	17.830	2.770	321
govswitch	0	1	0.508	1	0.501	321

Table 2 presents the summary statistics for all variables for a sample of annual state-

level data from 1984 to 2008. *Unemp* included in later regressions is quarterly, but the unemployment variable used here is annual (average of quarterly unemployment) for comparison with other annual variables.

Figure 2: Map of Gubernatorial Election Cycles

Figure 2 shows the gubernatorial election cycle for each state as of 2008. Years given in the key are the first and last years of the cycle included in the sample. There were two changes to gubernatorial election cycles during the time covered by the sample: Arkansas held an election in 1984 but switched to off-presidential election even years, beginning in 1986, and Rhode Island held elections every even year until 1994 before switching to a four year cycle.

Table 3: Firm Count By State

State	Number of Firms	State	Number of Firms
Alabama	25	Montana	8
Alaska	4	Nebraska	17
Arizona	83	Nevada	74
Arkansas	21	New Hampshire	25
California	983	New Jersey	291
Colorado	227	New Mexico	12
Connecticut	159	New York	523
Delaware	19	North Carolina	98
Florida	320	North Dakota	3
Georgia	159	Ohio	175
Hawaii	11	Oklahoma	79
Idaho	16	Oregon	54
Illinois	257	Pennsylvania	230
Indiana	61	Rhode Island	24
Iowa	20	South Carolina	25
Kansas	34	South Dakota	7
Kentucky	34	Tennessee	76
Louisiana	33	Texas	645
Maine	5	Utah	58
Maryland	88	Vermont	6
Massachusetts	306	Virginia	136
Michigan	97	Washington	106
Minnesota	156	West Virginia	8
Mississippi	13	Wisconsin	65
Missouri	73	Wyoming	7
Total		5956	

Table 3 presents the number of total firms for each state, for a sample of quarterly data from 1984 to 2008. The firm's state is the state of headquarters, as identified by Compustat. Eight firms headquartered in the District of Columbia, which elects a mayor, rather than a governor, are excluded from the sample.

Table 4: Financial Variable Definitions

Data Source Variable	Variable Definition
Investment and Financial Characteristics (Compustat)	
Investment/Assets	(Capital Expenditures (CAPXY)/Total Assets (ATQ))*100
Sale of Capital/Assets	Sale of Property (SPPEY)/Total Assets (ATQ)
Employment/Assets	Total Employees (EMP)/Total Assets (ATQ)
Long-term Debt/Assets	Long-Term Debt Total (DLTTQ)/Total Assets (ATQ)
Short-term Debt/Assets	Debt in Current Liabilities Total (DLCQ)/Total Assets (ATQ)
Change in Cash/Assets	(Cash and Short-Term Investments (CHE) – prev. year’s Cash and Short-Term Investments (CHEQ))/Total Assets (ATQ)
Market-to-book	(Assets Total (ATQ) + Common/Ordinary Equity (CEQQ) + Income Taxes Total (TXTQ) + Common Shares Outstanding (CSHOQ) *Price Close (PRM)) / Total Assets (ATQ)
Market Cap	Common Shares Outstanding(CSHOQ)*Price Close (PRCM)
Specific Assets	Property, Plant, and Equipment – Buildings at Cost (FATE)/ Total Assets (AT)
Non-Specific Assets	Current Assets (ACT)/ Total Assets (AT), Property, Plant, and Equipment – Land and Improvements at Cost (FATP)/ Total Assets (AT)
Pricing and Volatility (CRSP)	
Volatility	average monthly log of squared daily returns

Table 4 presents the definitions and data sources for all financial variables. All Compustat variables are defined quarterly, with the exception of asset specificity and nonspecificity measures, which are defined using annual data.

Figure 3: Map of Term Limits by State

Figure 3 shows the term limits for each state at the end of the sample in 2008.

Table 5: Summary Statistics - Firm-level Variables

Variable	min	median	mean	max	sd
Election Variables					
election	0	0	0.251	1	0.434
close	0	0	0.143	1	0.350
yearafter	0	0	0.252	1	0.439
pres. election	0	0	0.278	1	0.478
yearafter pres.	0	0	0.238	1	0.426
termlim	0	0	0.049	1	0.216
party switch	0	0	0.094	1	0.292
switch2rep	0	0	0.045	1	0.208
switch2dem	0	0	0.046	1	0.209
Economy Controls					
recession	0	0	0.127	1	0.333
Δ GDP (%)	-14.838	5.601	5.678	15.777	2.486
unemployment (%)	2.100	5.300	5.468	14.900	1.417
Financial Variables					
capex/assets (%)	1.4E-4	1.064	2.014	101.551	3.431
market-to-book	0.0359	1.508	2.766	478.340	8.139
long-term debt/assets	0	0.127	0.201	42.166	0.355
short-term debt/assets	-0.050	0.017	0.088	99.875	0.743
cash flow/assets	-499.300	0.017	-0.031	65.351	1.275
ln(market cap)	-8.805	4.734	4.779	12.285	2.243
employment	0	659.000	6,290.000	779,100.000	25,032.000
employment (th)/ assets (mil) (%)	0	0.580	1.186	900.000	5.696
sale of PPE/assets (%)	-31.294	0	0.564	11,390.480	27.522

Table 5 presents the summary statistics for all variables for a sample of quarterly data from 1984 to 2008. Summary statistics for election variables are given for the entire sample of matched data.

Table 6: Correlations - State-level Variables - Election Year Observations Only

	Δ GDP	unemp	diff
diff	0.141 (0.056)	-0.147 (0.056)	-
unemp	-0.257 (0.054)	-	-
Δ GDP	-	-	-

Table 6 presents the correlations for all continuous variables from a sample of annual state-level data from 1984 to 2008, election year observations only. *Unemp* included in later regressions is quarterly, but the unemployment variable used here is annual (average of quarterly unemployment) for comparison with other annual variables. Standard errors are given in parentheses.

Table 7: DDD Results for Election, Presidential Election, and Quarter

Quarter	Q1	Q2	Q3	Q4
Intercept	1.684*** (0.184)	1.683*** (0.185)	1.682*** (0.185)	1.690*** (0.184)
election	0.006 (0.047)	-0.005 (0.046)	0.031 (0.048)	-0.005 (0.045)
election*quarter	0.005 (0.046)	0.045 (0.047)	-0.099** (0.044)	0.047 (0.086)
pres. election	0.130 (0.106)	0.114 (0.104)	0.094 (0.108)	0.097 (0.108)
pres. election*quarter	-0.069* (0.038)	-0.022 (0.033)	0.033 (0.032)	0.053 (0.046)
pres. election*election	0.128 (0.093)	0.134 (0.101)	0.109 (0.104)	0.190* (0.099)
pres. election*election*quarter	0.049 (0.097)	0.025 (0.098)	0.130 (0.089)	-0.203 (0.143)
Δ GDP	5.730*** (0.986)	5.734*** (0.987)	5.733*** (0.986)	5.740*** (0.989)
recession	-0.003 (0.103)	-0.001 (0.104)	0.010 (0.109)	-0.001 (0.101)
unemp	-0.040** (0.017)	-0.040** (0.017)	-0.040** (0.017)	-0.040** (0.017)
Q1	-0.167*** (0.020)	-0.178*** (0.017)	-0.184*** (0.017)	-0.184*** (0.017)
Q2	-	-0.002 (0.021)	-	-
Q3	-0.006 (0.015)	-	0.007 (0.019)	-0.006 (0.015)
Q4	0.349*** (0.024)	0.355*** (0.023)	0.348*** (0.024)	0.327*** (0.032)
market-to-book	3.1E-4*** (1.2E-4)	3.1E-4*** (1.2E-4)	3.1E-4*** (1.2E-4)	3.1E-4*** (1.2E-4)
cash flow	-0.171*** (0.037)	-0.172*** (0.037)	-0.172*** (0.037)	-0.172*** (0.037)
lt debt	0.109** (0.046)	0.109** (0.046)	0.109** (0.046)	0.109** (0.046)
st debt	0.181*** (0.054)	0.181*** (0.054)	0.181*** (0.054)	0.181*** (0.054)
market cap	0.015*** (0.005)	0.015*** (0.005)	0.015*** (0.005)	0.015*** (0.005)
state/industry/year FE	yes	yes	yes	yes
sample size	216,782	216,782	216,782	216,782
no. of clusters	1204	1204	1204	1204
R ²	0.096	0.096	0.096	0.096

Table 7 presents results using quarterly data from 1984 to 2008 for a difference-in-difference-in-difference (DDD) estimation with *election*, *pres. election*, and *quarter*. The *quarter* used in the interaction is given in the column header. The dependent variable is investment, capital expenditures as a percentage of total assets. Standard errors are double clustered by year and state and given in parentheses below coefficient estimates. Statistical significance at the 0.01^{***}, 0.05^{**}, and 0.1^{*} level is designated by asterisks.

Table 8: DDD Results for Election, Presidential Election, and Quarter 3 - Size and Potential Investment Quintiles

Quintile	Asset Quintiles					Employee Quintiles					Market-to-book Quintiles				
	(1)	(5)	(1) - (5)	(1)	(5)	(1)	(5)	(1) - (5)	(1)	(5)	(1)	(5)	(1) - (5)	(1)	(5)
election*Q3	-0.348** (0.177)	-0.064 (0.061)	-0.320** (0.132)	-0.466** (0.188)	0.001 (0.034)	-0.467*** (0.135)			-0.056 (0.074)	-0.367** (0.177)	0.311** (0.136)				
sample average capex/assets	2.284%	1.897%		2.538%	1.855%				1.516%	2.530%					
predicted %Δ capex/assets	-15.236%	-3.374%		-18.361%	0.054%				-3.694%	-14.506%					
firm/economy controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
state/industry/year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
sample size	43,886	43,904		41,207	41,195				43,885	43,904					
no. of clusters	1016	997		990	955				1058	1015					
R ²	0.060	0.193		0.082	0.245				0.113	0.079					
median assets (mil \$) for sample	7.474	2286.310		-	-				-	-					
median employees for sample	-	-		37	13,000				-	-					
median mkt-to-bk for sample	-	-		-	-				0.885	4.541					

Table 8 presents only the *election*q3* term from a DDD estimation of *election*, *pres. election*, and Q3 for the highest and lowest size (asset and employee) and potential investment (market-to-book) quintiles. Firm and economy controls are included: *market-to-book*, *cash flow*, *lt debt*, *st debt*, *market cap*, *changeGDP*, *recession*, and *unemp*. The dependent variable is investment, capital expenditures as a percentage of total assets. Standard errors are double clustered by year and state and given in parentheses below coefficient estimates. Statistical significance at the 0.01***, 0.05**, and 0.1* level is designated by asterisks.

Table 9: DDD Results for Election, Presidential Election, and Quarter 3 - Asset Specificity/Non-specificity Quintiles

	Measure of Asset Specificity			Measures of Asset Non-Specificity					
	Buildings at Cost			Land & Improv. at Cost			Current Assets		
	(1)	(5)	(1) - (5)	(1)	(5)	(1) - (5)	(1)	(5)	(1) - (5)
Quintile									
election*Q3	0.004 (0.065)	-0.118 (0.086)	0.122 (0.076)	-0.107 (0.156)	0.069 (0.070)	-0.176* (0.101)	-0.425** (0.186)	-0.016 (0.037)	-0.409*** (0.134)
sample average	1.317%	2.549%		2.573%	2.198%		3.424%	1.091%	
capex/assets									
predicted %Δ	0.304%	-4.630%		-4.159%	3.139%		-12.412%	-1.467%	
capex/assets									
firm/economy controls	yes	yes	yes	yes	yes	yes	yes	yes	yes
state/industry/year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes
sample size	28,543	28,562		11,307	30,123		41,840	41,868	
no. of clusters	881	939		391	968		1079	912	
R ²	0.116	0.114		0.145	0.144		0.066	0.118	

Table 9 presents only the *election*Q3* term from a DDD estimation of *election*, *pres.* *election*, and Q3 for the highest and lowest asset specificity and non-specificity quintiles. Asset specificity and non-specificity measures are from Strömberg (2000). Asset specificity is measured by Compustat variable Property, Plant, and Equipment—Buildings at Cost (FATE)/ Total Assets (AT). Asset Nonspecificity is measured by Current Assets (ACT)/ Total Assets (AT) and Property, Plant, and Equipment – Land and Improvements at Cost (FATP)/ Total Assets (AT). The dependent variable is investment, capital expenditures as a percentage of total assets. Firm and economy controls are included: *market-to-book*, *cash flow*, *lt debt*, *st debt*, *market cap*, *changeGDP*, *recession*, and *unemp*. Standard errors are double clustered by year and state and given in parentheses below coefficient estimates. Statistical significance at the 0.01***, 0.05**, and 0.1* level is designated by asterisks.

Table 10: DDD Results for Election, Pres. Election, and Q3 - Politically Sensitive Industries

	Pol. Sen. Ind.	Pol. Insen. Ind.	Pol. Sen. - Pol. Insen.	Mines (28)	Oil (30)
<i>election</i> *Q3	-0.687*** (0.210)	-0.041 (0.040)	-0.646*** (0.214)	-0.965* (0.514)	-0.660** (0.263)
sample average capex/assets	4.654%	1.765%		3.450%	5.139%
predicted % Δ capex/assets	-14.761%	-2.323%		-27.971%	-12.843%
firm/economy controls	yes	yes		yes	yes
state/year FE	yes	yes		yes	yes
industry FE	yes	yes		no	no
sample size	18,821	199,894		1235	14,476
no. of clusters	821	1173		240	522
R ²	0.0748	0.0648		0.253	0.061

Table 10 presents only the *election**Q3 term from a DDD estimation of *election*, *pres. election*, and Q3. The dependent variable is investment, capital expenditures as a percentage of total assets. Firm and economy controls are included: *market-to-book*, *cash flow*, *lt debt*, *st debt*, *market cap*, *changeGDP*, *recession*, and *unemp*. Fama French 49 industries is used as the industry classification, and politically sensitive industries are Beer (4), Smoke (5), Guns (26), Gold (27), Mines (28), Coal (29), and Oil (30). Politically insensitive industries is the remaining sample. Standard errors are double clustered by year and state and given in parentheses below coefficient estimates. Statistical significance at the 0.01***, 0.05**, and 0.1* level is designated by asterisks.

Table 11: DDD Results for Election, Pres. Election, and Q3 - Employment as a Dependent Variable

	Whole Sample	Smallest Size Quintile	Pol. Sensitive Industries
election*Q3	-0.023 (0.027)	-0.298 (0.193)	-0.015* (0.008)
mean employment/assets for sample	1.186%	1.493%	0.271%
predicted % Δ employment/assets	-1.949%	-19.960%	-5.535%
firm/economy controls	yes	yes	yes
industry/year/state FE	yes	yes	yes
sample size	203,876	39,450	17,406
no. of clusters	1201	1011	792
R ²	0.053	0.046	0.515

Table 11 presents only the *election*Q3* term from a DDD estimation of *election*, *pres. election*, and Q3. The dependent variable is employment (th) as a percentage of total assets (mil). Firm and economy controls are included: *market-to-book*, *cash flow*, *lt debt*, *st debt*, *market cap*, *changeGDP*, *recession*, and *unemp*. Fama French 49 industries is used as the industry classification, and politically sensitive industries are Beer (4), Smoke (5), Guns (26), Gold (27), Mines (28), Coal (29), and Oil (30). Standard errors are double clustered by year and state and given in parentheses below coefficient estimates. Statistical significance at the 0.01***, 0.05**, and 0.1* level is designated by asterisks.

Table 12: DDD Results for Year-after, Year-after Presidential Election, and Q1 - Elections Won by Incumbent vs. New Governor

Variable	Whole Sample	Governor Switch = 1	Governor Switch = 0 All Obs.	Close Elec.
yearafter	-0.093* (0.048)	-0.147*** (0.049)	0.056 (0.057)	-0.069 (0.261)
yearafter*Q1	0.073** (0.034)	0.079* (0.042)	0.064 (0.043)	0.579* (0.304)
mean capex/assets for sample	2.024%	2.031%	2.050%	1.811%
firm/economy controls	yes	yes	yes	yes
state/industry/year FE	yes	yes	yes	yes
sample size	216,782	189,909	183,667	14,030
no. of clusters	1204	1055	1025	230
R ²	0.096	0.118	0.094	0.121

Table 12 presents only the *yearafter* and *yearafter*q1* terms from a DDD estimation of *yearafter*, *yearafter pres.*, and Q1. The governor switch = 1 column includes observations for the year after a new governor is elected. The governor switch = 0 column includes observations for elections won by an incumbent governor; only year-after observations for close elections won by incumbents are included in the final column. The dependent variable is investment, capital expenditures as a percentage of total assets. Firm and economy controls are included: *market-to-book*, *cash flow*, *lt debt*, *st debt*, *market cap*, *changeGDP*, *recession*, and *unemp*. Standard errors are double clustered by year and state and given in parentheses below coefficient estimates. Statistical significance at the 0.01***, 0.05**, and 0.1* level is designated by asterisks.

Table 13: Monthly Averages of Volatility - Governor Switch vs. Incumbent Win

Sample	Jan.	Feb.	March	April	May	June
All Year-after Obs.						
govswitch = 1	-3.496	-3.528	-3.546	-3.514	-3.583	-3.618
govswitch = 0	-3.527	-3.562	-3.570	-3.546	-3.599	-3.641
difference (1 - 0)	0.031 (0.035)	0.035 (0.036)	0.024 (0.024)	0.032 (0.032)	0.016 (0.016)	0.023 (0.023)
Only Year-after Close Election Obs.						
govswitch = 1	-3.488	-3.513	-3.545	-3.516	-3.581	-3.605
govswitch = 0	-3.520	-3.577	-3.567	-3.511	-3.574	-3.613
difference (1 - 0)	0.032 (0.034)	0.063** (0.028)	0.022 (0.041)	0.036 (0.033)	-0.007 (0.032)	0.008 (0.033)

Table 13 presents monthly average volatility for the year after elections, for years in which a new governor was elected (*govswitch* = 1) and in which the incumbent is re-elected (*govswitch* = 0). Volatility is the monthly average of the log of squared daily returns. Statistical significance at the 0.01***, 0.05**, and 0.1* level is designated by asterisks.

Table 14: Summary of Alternative Hypotheses and Predicted Effects on Investment

Panel A: Elections without incumbents vs. elections with term-limited incumbents	Before Election Without Incumbent	Before Term Limit Election
1. Uncertainty causes firms to re-evaluate investment decisions, uncertainty is higher for closer elections	↓	↓↓
2. Governor's policies are weakened before elections (lame duck)	↓	↓↓
3. Politician manipulates investment to influence election results to stay in office/keep his party in office	↑	↑
4a. Firm only attempts to influence elections without an incumbent manipulates investment to keep current party in control	↓	↓↓
4b. Firm manipulates investment to keep favored party or official in office	↑	↑
4c. Firm manipulates investment to oust party or official	↓	↓
4d. Firm only attempts to influence elections without an incumbent, manipulates investment to keep current party in control	↑	↑
Panel B: Elections with incumbent vs. elections with term-limited incumbent	Before Election With Incumbent	Before Term Limit Election
1. Uncertainty causes firms to re-evaluate investment decisions, uncertainty is higher for closer elections	↓	↓↓
2. Governor's policies are weakened before elections (lame duck)	↓	↓↓
3. Politician manipulates investment to influence election results to stay in office/keep his party in office	↑↑	↑
4a. Firm only attempts to influence elections without an incumbent manipulates investment to keep current party in control	0	↓
4b. Firm manipulates investment to keep favored party or official in office	↑	↑↑
4c. Firm manipulates investment to oust party or official	↓↓	↓
4d. Firm only attempts to influence elections without an incumbent, manipulates investment to keep current party in control	0	↑

Table 14 presents a summary of competing hypotheses that explain changes in investment before an election. The arrows signify the direction and relative magnitude of the effect within a row - for example, within the same row, ↓↓ means a greater decline than ↓. However, no comparison in effect is being made to any ↓ in any other row.

Table 15: DDD Results for Term Limit, Presidential Election, and Q3

	Whole Sample		Politically Sensitive Industries	
	all years	close election years only	all years	close election years only
termlim*Q3	-0.068 (0.063))	0.044 (0.096)	-0.826** (0.328)	-0.690* (0.388)
mean capex/assets for sample	2.032%	1.940%	4.619%	4.545%
predicted % Δ capex for Q3	-3.346%	2.268%	-17.883%	-15.182%
firm/economy controls	yes	yes	yes	yes
state/industry/year FE	yes	yes	yes	yes
sample size	216,782	31,245	18,821	2486
no. of clusters	1204	189	821	127
R ²	0.096	0.061	0.075	0.091

Table 15 presents only the *termlim***q3* term from a DDD estimation of *termlim*, *pres. election*, and Q3. The dependent variable is investment, capital expenditures as a percentage of total assets. Fama French 49 industries is used as the industry classification, and politically sensitive industries are Beer (4), Smoke (5), Guns (26), Gold (27), Mines (28), Coal (29), and Oil (30). Firm and economy controls are included: *market-to-book*, *cash flow*, *lt debt*, *st debt*, *market cap*, *changeGDP*, *recession*, and *unemp*. Standard errors are double clustered by year and state and given in parentheses below coefficient estimates. Statistical significance at the 0.01***, 0.05**, and 0.1* level is designated by asterisks.

Figure 4: Average Monthly Volatility - Election and Non-election Years

Figure 4 shows the average volatility for election and non-election years for a sample from 1984 to 2008. Volatility is the monthly average of the log of squared daily returns. The dashed lines are 90% confidence intervals around the means.

Table 16: DDD Results for Election and Year-after - Disinvestment as a Dependent Variable

	Whole Sample	Smallest Size Quintile	Politically Sensitive Industries
election*Q3	-0.080 (0.054)	-0.428** (0.195)	0.041 (0.312)
yearafter*Q1	- 0.215* (0.131)	- 1.028 (0.635)	0.761* (0.430)
mean disinvestment (SPPEY)/ assets for sample	0.546%	0.953%	1.673%
predicted % Δ disinvestment/assets	-14.652%	44.911%	2.451%
firm/economy controls	yes	yes	yes
state/industry/year FE	yes	yes	yes
sample size	175,428	39,450	14,415
no. of clusters	1199	1011	772
R ²	0.041	0.045	0.023

Table 16 presents only the *election*Q3* and *yearafter*Q1* terms from two DDD estimations of *election*, *pres. election*, and *Q3* and *yearafter*, *yearafter pres.*, and *Q1*, respectively. The dependent variable is disinvestment, sale of property (SPPEY) as a percentage of total assets. Firm and economy controls are included: *market-to-book*, *cash flow*, *lt debt*, *st debt*, *market cap*, *changeGDP*, *recession*, and *unemp*. Fama French 49 industries is used as the industry classification and politically sensitive industries are Beer (4), Smoke (5), Guns (26), Gold (27), Mines (28), Coal (29), and Oil (30). Standard errors are double clustered by year and state and given in parentheses below coefficient estimates. Statistical significance at the 0.01***, 0.05**, and 0.1* level is designated by asterisks.

Table 17: Proxy Quality Thresholds

	Tobin's Q	Election	Election*Q3	Pres. Election	Pres. election*Q3
Partial Correlation Thresholds					
(a)	0.998 (0.001)	0.998 (0.035)	0.998 (0.035)	0.998 (0.035)	0.998 (0.035)
(b)	0.998 (0.001)	0.169 (2.948)	0.005 (0.103)	0.015 (0.323)	0.952 (2.076)
(c)	0.000 (0.000)	0.000 (0.000)	0.003 (0.002)	0.000 (0.000)	0.153 (2.631)
(d)	0.000 (0.000)	0.000 (0.000)	0.003 (0.002)	0.000 (0.000)	0.153 (2.631)
Simple Correlation Thresholds					
(a)	0.998 (0.001)	0.998 (0.035)	0.998 (0.035)	0.998 (0.035)	0.998 (0.035)
(b)	0.998 (0.001)	0.169 (2.948)	0.005 (0.103)	0.015 (0.323)	0.952 (2.076)
(c)	0.000 (0.000)	0.000 (0.000)	0.003 (0.002)	0.000 (0.000)	0.153 (2.631)
(d)	0.000 (0.000)	0.000 (0.000)	0.003 (0.002)	0.000 (0.000)	0.153 (2.631)

Table 17 presents the proxy quality thresholds from Erickson and Whited (2005). “In (a) the measurement error may be correlated with the regression disturbance term and one or more regressors (including the unobserved regressor itself); in (b) the measurement error may be correlated with the disturbance, but is uncorrelated with every regressor; in (c) the measurement error may be correlated with one or more regressors, but is uncorrelated with the disturbance; and in (d) the measurement error is uncorrelated with all other variables” (Erickson and Whited, 2005). Standard errors are given in parentheses below coefficient estimates.

Table 18: Elections and Close Elections by Gubernatorial Election Cycle

Election cycle years	No. of states	No. of elections	No. of close elections	% close elections
1984, 1988, 1992, 1996, 2000, 2004, 2008	11	81	43	53.09%
1985, 1989, 1993, 1997, 2001, 2005	2	12	9	75.00%
1986, 1990, 1994, 1998, 2002, 2006	36	216	133	61.57%
1987, 1991, 1995, 1999, 2003, 2007	3	19	10	52.63%
Whole Sample	50	328	195	59.45%

Table 18 presents breakdown of number of elections and close elections by election cycle. Close elections are those elections with a vote differential less than the average vote differential for the sample. Number of states in an election cycle are as of 2008. Arkansas held an election in 1984 and then switched to off-presidential election even years, beginning in 1986. Rhode Island held elections every even year until 1994 then switched to a four year cycle. Although there are 50 states, the total number of states column sums to 52 as Vermont and New Hampshire hold elections every two years.

Figure 5: Close Elections Across Time

Figure 5 shows the number of elections and close elections by year for the sample.

Table 19: Probit Estimation - Election Closeness as Dependent Variable (1st stage of Instrumental Variable Estimation)

Variable	Coefficient Estimate	Marginal Effect
Intercept	-0.826 (0.761)	
termlim	1.225*** (0.259)	0.339
pres. election	-0.546 (0.456)	-0.151
unemp	0.121 (0.075)	0.033
changeGDP	-2.041 (2.913)	-0.565
long-term debt	-1.071 (0.690)	-0.297
short-term debt	-0.575** (0.268)	-0.159
cash flow	-1.706* (0.897)	-0.472
market cap	-0.097 (0.128)	-0.027
market-to-book	0.022 (0.020)	0.006
close = 1	188	
close = 0	127	

Table 19 presents results from a probit model estimated on annual data for gubernatorial election years only from 1984 to 2008. The dependent variable is election closeness. Financial variables are state averages. Statistical significance at the 0.01***, 0.05**, and 0.1* level is designated by asterisks.

Table 20: DDD Results for Close Election, Presidential Election, and Quarter Using Close and Fitted Close (2nd stage of Instrumental Variable Estimation)

Quarter	Q1	Q2	Q3	Q4
close*quarter	-0.020 (0.077)	0.023 (0.074)	-0.034 (0.082)	0.030 (0.138)
%Δ predicted capex for quarter	-0.994%	1.143%	-1.689%	1.490%
R ²	0.079	0.079	0.079	0.079
fitted close*quarter	0.061 (0.154)	-0.196 (0.136)	-0.183 (0.136)	0.320 (0.237)
%Δ predicted capex for quarter	3.030%	-9.737%	-9.091%	15.897%
R ²	0.079	0.079	0.079	0.079
mean capex for sample	2.013%			
sample size	53,640			
no. of clusters	313			
Subsample Results - Smallest Asset Quintile				
close*quarter	0.054 (0.247)	0.160 (0.241)	-0.300 (0.340)	0.079 (0.564)
%Δ predicted capex for quarter	2.340%	6.932%	-12.998%	3.423%
R ²	0.057	0.057	0.058	0.057
fitted close*quarter	0.449 (0.490)	-0.069 (0.452)	-0.884* (0.525)	0.498 (0.919)
predicted %Δ capex for quarter	19.454%	-2.990%	-38.302%	21.577%
R ²	0.058	0.057	0.058	0.058
mean capex for sample	2.308%			
sample size	10,715			
no. of clusters	266			

Table 20 presents results using only gubernatorial election year quarterly data from 1984 to 2008 for a difference-in-difference-in-difference estimation with *close*, *pres. election*, and *quarter*. The dependent variable is investment, capital expenditures as a percentage of total assets. Economy controls include *recession*, *unemp*, and *change GDP*. Firm and economy controls are included: *market-to-book*, *cash flow*, *lt debt*, *st debt*, *market cap*, *changeGDP*, *recession*, and *unemp*. Fitted close is from the first stage probit model in Table 19; the DDD using fitted close includes annual state means of firm controls from first stage of probit. Standard errors are double clustered by year and state and given in parentheses below coefficient estimates. Year, state, and industry fixed effects are included. Statistical significance at the 0.01***, 0.05**, and 0.1* level is designated by asterisks.

Table 21: Distribution of Polls for Gubernatorial Elections, 2007-2010

Year	No. of elections	Prev. Year	Number of polls				Total polls	Polls per election
			Q1	Q2	Q3	Q4		
2007	3	0	4	5	8	9	26	8.67
2008	11	1	6	28	47	60	142	12.91
2009	2	1	10	22	44	51	128	64.00
2010	37	27	82	130	288	253	780	21.08
Total	53	29	102	185	387	373	1076	20.30
% of total polls		2.7%	9.5%	17.2%	36.0%	35%		

Table 21 presents the number of polls before elections for each year from 2007 to 2010. The closeness measure from poll data used in Table 22 is from the polls in Q2 and Q3.

Table 22: DDD results for Close, Presidential Election, and Q3 - Close Defined from Election Results and Poll Data - Election Year Obs. Only, 2007 - 2010

Panel A: Close from election	Q1	Q2	Q3	Q4
close	-0.995*** (0.305)	-1.146*** (0.404)	-0.649** (0.299)	-0.677* (0.353)
close*quarter	0.009 (0.006)	-0.175 (0.167)	0.613 (0.421)	-0.291 (0.252)
firm/economy controls	yes	yes	yes	yes
state/industry/year FE	yes	yes	yes	yes
sample size	1371	1371	1371	1371
no. of clusters	14	14	14	14
R ²	0.356	0.357	0.357	0.357
Panel B: Close from poll data	Q1	Q2	Q3	Q4
close	-0.925*** (0.318)	-1.118*** (0.408)	-0.666** (0.295)	-0.652* (0.352)
close*quarter	-0.008 (0.154)	-0.176 (0.168)	0.623 (0.422)	-0.287 (0.246)
firm/economy controls	yes	yes	yes	yes
state/industry/year FE	yes	yes	yes	yes
sample size	1371	1371	1371	1371
no. of clusters	14	14	14	14
R ²	0.356	0.357	0.357	0.357

Table 22 presents only the *close* and *close*quarter* terms from a DDD estimation with *close*, *pres. election*, and *quarter*. The quarter used in the interaction terms is given in the column header. For Panel A, the closeness measure is equal to 1 if the election outcome is less than the mean vote differential for the sample. For Panel B, the closeness measure is equal to 1 if the average poll margin is less than the mean average poll margin for the sample. The dependent variable is investment, capital expenditures as a percentage of total assets. Economy controls include *recession*, *unemp*, and *change GDP*. Firm and economy controls are included: *market-to-book*, *cash flow*, *lt debt*, *st debt*, *market cap*, *changeGDP*, *recession*, and *unemp*. Standard errors are double clustered by year and state and given in parentheses below coefficient estimates. Statistical significance at the 0.01***, 0.05**, and 0.1* level is designated by asterisks.

Table 23: DDD Results for Gubernatorial Election Cycles

Without pres. cycle states	Q1	Q2	Q3	Q4
election	0.025 (0.049)	0.010 (0.049)	0.047 (0.050)	0.013 (0.050)
election*quarter	-0.004 (0.047)	0.055 (0.048)	-0.097** (0.046)	0.043 (0.089)
firm/economy controls	yes	yes	yes	yes
state/industry/year FE	yes	yes	yes	yes
sample size	197,083	197,083	197,083	197,083
no. of clusters	882	882	882	882
R ²	0.096	0.096	0.096	0.096
Off-pres. even year cycle	Q1	Q2	Q3	Q4
election	-0.007 (0.052)	-0.021 (0.053)	0.017 (0.054)	-0.016 (0.059)
election*quarter	3.1E-5 (0.050)	0.057 (0.051)	-0.098* (0.051)	0.038 (0.096)
firm/economy controls	yes	yes	yes	yes
state/industry/year FE	yes	yes	yes	yes
sample size	179,049	179,049	179,049	179,049
no. of clusters	782	782	782	782
R ²	0.095	0.095	0.095	0.095
Odd year election cycles	Q1	Q2	Q3	Q4
election	-0.006 (0.193)	-0.018 (0.189)	0.021 (0.190)	-0.026 (0.188)
election*quarter	-0.005 (0.090)	0.043 (0.094)	-0.114 (0.074)	0.077 (0.153)
firm/economy controls	yes	yes	yes	yes
state/industry/year FE	yes	yes	yes	yes
sample size	18,034	18,034	18,034	18,034
no. of clusters	100	100	100	100
R ²	0.138	0.138	0.138	0.138

Table 23 presents the *election* and *election*quarter* term from a DDD estimation with *election*, *pres. election*, and *quarter*. The quarter used in the interaction term is given in the column header. Samples are limited to states with gubernatorial elections that did not occur in presidential election years, states with even year gubernatorial elections not coinciding with presidential elections, and gubernatorial elections occurring in odd years. Table 18 gives description of the gubernatorial election cycles. The dependent variable is investment, capital expenditures as a percentage of total assets. Economy controls include *recession*, *unemp*, and *change GDP*. Firm and economy controls are included: *market-to-book*, *cash flow*, *lt debt*, *st debt*, *market cap*, *changeGDP*, *recession*, and *unemp*. Standard errors are double clustered by year and state and given in parentheses below coefficient estimates. Statistical significance at the 0.01***, 0.05**, and 0.1* level is designated by asterisks.