

# Political Uncertainty and Corporate Investment Cycles

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## ABSTRACT

We document novel evidence that political uncertainty has a dampening effect on corporate investment. Specifically, we find significant cycles in firm-level corporate investment corresponding with the timing of national elections across a sample of 48 countries between 1980 and 2004. During the year leading up to the election outcome, firms reduce investment expenditures by an average of 5.3% relative to non-election years, controlling for firm characteristics and economic conditions. We investigate several potential explanations and find evidence consistent with the hypothesis that political uncertainty generates cycles in investment expenditures in election years. In particular, we find that the investment cycles are more pronounced in countries with fewer checks and balances in place at election time, parliamentary political systems, civil law legal origins, and among countries with higher measures of economic risk. Within countries, the cycles are more pronounced for firms in politically sensitive industries, firms with high capital intensity, and firms with a lower proportion of sales coming from exports. We also find that investment cycles are stronger around elections with more uncertain outcomes as measured by the closeness of election result. Decreases in corporate investment correspond with temporary increases in corporate cash holdings in the year leading up to the election. Overall, these findings suggest that political uncertainty is an important determinant of corporate financial policies around the world.

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“...how unrealistic any theory of investment opportunity is which leaves the political factor out of account”. Joseph A. Schumpeter (1939)

## **I. Introduction**

The relationship between politics and economic outcomes has a long history in research and public debate. There are various channels through which politics and the political process are hypothesized to influence real economic activity. One particularly interesting connection is the effect of elections and changes of policymakers on the real decisions of firms. While standard models of policy typically assume a single welfare maximizing planner that makes policy choices over the entire life of the economy, the real world is characterized by leaders who face limited terms and may be replaced by another leader with different policy preferences. The incentives and uncertainty associated with possible regime change has implications for the behavior of both politicians and firms. In this paper, we investigate the behavior of firms around the timing of national elections using an international sample to examine whether uncertainty over possible changes in government policy have an effect on firm-level investment expenditures. Elections provide a convenient empirical framework for studying the effects of political uncertainty. For a large number of countries, the timing of elections is fixed by constitution and outside the control of any individual firm. Since political uncertainty is likely to be higher around times when government leadership may change hands, it provides us with an interesting setting for studying the impact of policy uncertainty on investment.

There are several possible ways in which an election can lead to measurable changes in economic activity. On one hand, policymakers facing an upcoming election may choose policies to increase the probability of re-election. The political business cycle literature deals with incentives created by politicians who either have a preference for staying in office or a preference for maintaining specific policies in the case that he or she must leave office. Starting with Nordhaus's (1975) model of political business cycles, there has been debate over whether incumbents successfully manipulate fiscal policy and monetary policy instruments to influence the level of economic activity prior to an election in order to maximize the probability of reelection. The basic idea of these opportunistic models is that voters make their decisions based on the state of the economy at the time of the election and the incumbent

chooses policies to manipulate the short-run Phillips curve to induce higher growth prior to an election. Hibbs (1977) offered a different perspective on political business cycles, where changes in economic activity around national elections arise from partisan differences and policy preferences. The limitations of both these opportunistic and partisan models in the presence of rational expectations were spelled out by Alesina (1987) and others. Empirically, however, there is little support for these political business cycle theories. While aggregate economic conditions prior to elections do have a significant effect on election outcomes, there is no significant pre-electoral increase in economic activity in the United States or any of the OECD countries<sup>1</sup>. While there is little evidence that policy makers manipulate fiscal and monetary instruments to affect economic outcomes in election years, there is some evidence that governments take action to improve their chances of staying in power. Dinc (2005) and Cole (2007) investigate bank lending patterns in several emerging markets and India by government owned banks in election years. Interestingly, they both find that lending by government-owned banks increase significantly in election years relative to private banks, particularly in hotly contested regions.

Firms may also have incentives to change their behavior in election years to assist policymakers in their re-election hopes. Some firms may have established relationships with incumbent policymakers which may lead to various benefits, such as preferable tax treatment, awarding of government contracts and bailouts in the case of financial distress. Faccio (2006) finds that approximately three percent of firms representing eight percent of the world's market capitalization have political connections<sup>2</sup> which may be value enhancing. Indeed, Faccio, Masulis and McConnell (2006) find that politically connected firms are much more likely to be bailed out compared to non-connected firms. As such, connected firms have an incentive to aid incumbents to ensure their connection remains in power after the election. Consistent with this, Bertrand, Kramarz, Schoar and Thesmar (2006) investigate the behavior of politically connected CEOs around elections in France. They find that firms managed by connected CEOs boost their investment, particularly in politically contested areas, during election years, likely in an attempt to help their connection get re-elected.

While the first two channels, political business cycles and political connections, predict a positive relationship between investment and election timing, political uncertainty and instability is hypothe-

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<sup>1</sup>See Drazen (2000) for a review of the empirical evidence related to political business cycles.

<sup>2</sup>Faccio (2006) classifies a firm as being politically connected if one of its officers or large shareholders is a member of parliament, a minister, or closely related to a top politician or party in that country.

sized to have a negative effect on firm investment. Uncertainty over an election outcome translates into policy uncertainty and a chance that the rules of the game may change after the election. Rodrik (1991) and Pindyck and Solimano (1993) are prominent examples of this literature in which the uncertainty brought about by political uncertainty leads firms to choose lower levels of investment expenditures. The idea that political instability can deter investment on the aggregate level is supported by empirical evidence. Barro (1991) and Alesina and Perotti (1996) find that measures of political instability and violence are correlated with cross-country differences in investment rates. Pindyck and Solimano (1993) and Mauro (1995) find evidence that political uncertainty and an index measuring bribery and corruption are negatively related to investment spending at the aggregate level. However, several difficulties arise in interpreting the aggregate evidence. First, it is not clear that the various measures of political instability are exogenous to economic conditions and aggregate investment. Second, there are problems with aggregation. While uncertainty in general may have a depressing effect on investment, it may not affect all firms the same. Indeed, some firms may even accelerate investment in the face of political uncertainty. Finally, as discussed in Pindyck and Solimano (1993), models of investment under uncertainty are less clear about how uncertainty affects long-run equilibrium levels of investment. The predictions of the models are more clear when there are temporary shocks to the level of uncertainty.

In this paper, we investigate whether political uncertainty matters for investment at the firm level. We examine changes in corporate investment around times when there are fluctuations in political uncertainty by comparing corporate behavior in the year leading up to national election outcomes with that in non-election years. National elections provide a convenient and interesting environment for studying the effects of uncertainty on corporate policy. National elections provide a recurring source of policy uncertainty. Election outcomes have implications for industry regulation, monetary and trade policy, taxation, and in more extreme cases, privatization of government-owned firms or the nationalization of private firms. Elections around the world are a convenient event from an empirical perspective. They provide a semi-natural experiment for studying the effects of uncertainty on corporate decisions. The timing of elections are out of the control of any given firm and even fixed by constitutional rules for a majority of observations in our sample. In addition, elections around the world take place in different years over time, allowing us to net out any global trends in corporate investment.

The basic intuition is simple: if the election creates the potential for a bad outcome from a firm's perspective, the option value of waiting to invest increases. By looking at a panel of international elections, we can exploit the variation in political stability, political systems, and legal origins across countries. It also allows us to investigate some interesting within-country variations. For example, we expect that the impact of political uncertainty will be higher when the uncertainty regarding the election outcome is higher. In addition, we expect that certain industries will be more politically sensitive. For example, we expect the results to be stronger for defense and health care industries compared to the consumer nondurables industry. We also examine the cash policy of firms around elections. Increasing uncertainty about a firm's operating environment around an election gives rise to a precautionary motive for holding cash as managers hold off on some investment projects until the election outcome is known.

We find novel and robust evidence that political uncertainty around national elections induces cycles in corporate financial policies. In the year leading up to the election, investment expenditures decline by an average of 5.3% in the period leading up to the election date, controlling for growth opportunities, cash flows, and economic growth. Across countries, this temporary decline in investment expenditures is larger in countries with civil law origins, parliamentary systems, fewer checks and balances, and higher measures of economic risk. Within countries, we find that the cycles are more pronounced for firms in politically sensitive industries, firms with high capital intensity, and firms with a lower proportion of sales coming from exports. We also find that elections in which the outcome is "close" as measured by voting results induce larger investment cycles than elections in which the victor wins by a large margin. With respect to changes in cash holdings, we find increases in cash balances in the year prior to the election in the amount of 5% of the average cash to assets ratio, controlling for firm and economic conditions. The increase in cash holdings appears to offset the reduction in investment spending, suggesting that the funds that would have been used as investment are temporarily saved as cash until the election uncertainty is resolved. We view these findings as having two important contributions. First, these results suggest that political uncertainty matters for a firm's real investment and savings decisions. Second, this study provides relatively clean evidence that models of investment under uncertainty can explain some additional features of investment dynamics that are not captured in standard neoclassical models of investment. As far as we know, we are the first to examine political uncertainty around national elections and the impact on investment at the firm level.

The remainder of the paper proceeds as follows. Section II develops the empirical predictions. Section III summarizes the firm characteristics and election data. Section IV begins with the discussion of univariate evidence of corporate political cycles and proceeds to an analysis in a multivariate setting across various subsamples. Various robustness tests are also provided in this section. Section V examines changes in corporate cash policy around the election period. Section VI concludes.

## **II. Electoral Uncertainty and Corporate Investment**

The modern theory of investment suggests that in the presence of uncertainty and investment irreversibility, an optimizing manager must decide not only which projects to undertake but also at what point of time the investment should be made. Changes in uncertainty affect the value of waiting to invest, so that agents trade off the extra returns from early commitment to investment with the benefits of increased information gained by delaying project implementation. Bernanke (1983) suggests that events whose long-run implications are uncertain can generate investment cycles by increasing the returns to waiting for new information, particularly when the source of uncertainty periodically renews itself over time. A temporary increase in uncertainty can lead to immediate declines in investment spending.

The literature on irreversible investment views a firm as a portfolio of options and employs option pricing techniques and intuition for evaluating the investment decisions of a firm. When a particular investment project is characterized by (partial) irreversibility and uncertainty over future cash flows, the value of the investment project will be affected by the same factors that influence the pricing of financial options, particular the volatility or uncertainty of the future price of the underlying asset. The application of option pricing to capital budgeting has generated many empirical predictions for how investment should behave in the face of uncertainty. Some classic examples include McDonald and Seigel (1985) which examines the valuation of operating options and the value of waiting to invest. They demonstrate that even moderate amounts of uncertainty can more than double the required rate of return for investment projects. Ingersoll and Ross (1992) model the timing decision in the face of interest rate uncertainty. They argue that the simple NPV rule is not optimal from a value-maximizing perspective under the assumptions of irreversibility and uncertainty. Investment projects are assumed

to be irreversible in the sense that it is costly to undo or significantly change the investment once implemented. Uncertainty in this case refers to the possibility that new information about the returns from various investment opportunities may arrive sometime in the future. Bernanke (1983) and Cukierman (1980) demonstrated in this context that information arriving over time can induce investment cycles as firms trade off the returns from early investment against the value of waiting for the new information before initiating investment.

The impact of policy uncertainty has a long history in macroeconomics. Many economists, including Friedman and Schwartz (1963), Romer (1990), and Higgs (1997), argued that uncertainty about the future of the capitalist economic system in the United States spurred by the stock market crash deepened the great depression as firms held off on investment projects until the uncertainty began to dissipate. More recently, Rodrik (1991) and Chen and Funke (2003) model the private investment decision in emerging markets in the face of policy uncertainty. These models point out that rational investors will withhold investment until a critical amount of policy uncertainty is resolved.

Uncertainty increases the value of waiting to invest through what Bernanke (1983) called the “bad news” principle. That is, an increase in uncertainty causes reductions in current investment only if there is some probability of a bad outcome. In the context of national elections, this suggests that firms may anticipate negative changes in the country’s macroeconomic policy, taxation, monetary policy, or the general regulatory environment. The degree of this uncertainty may vary across political systems and countries. In addition, election uncertainty is likely to vary within countries over time. Elections in which the outcome is not in question should induce less uncertainty than cases in which the race is very close between various candidates. Firms may rationally wait for the election uncertainty to be resolved before committing to investment projects. The bad news principle also predicts that the spread of potential outcomes matters as well, suggesting that countries with more unstable political institutions will experience larger swings in investment around the election.

There is an important potential objection to the application of the impact of uncertainty around national elections. In some cases, the outcome of an election could be construed as good news, regardless of who wins in the end. For example, if the current government is corrupt or incompetent, firms may view a likely change in power as good news and hence may not reduce investment prior to

the election outcome since any different outcome may be better than the current state of affairs. The bad news principle is more subtle in this case. Suppose a firm is choosing among  $k$  mutually exclusive investment projects, each with an expected return  $R_j$ . Consider an election outcome that increases the absolute return of each of the possible investment projects, regardless of the outcome. The firm may still wait to invest if the outcome would reorder the rankings of the individual projects. Thus, even minor expected policy changes can influence the timing decisions of firms. Thus, the bad news principle does not require the possibility of extreme policies such as nationalization of private assets to induce changes in investment. Even positive changes in policy may induce an incentive to wait to invest as the outcome will still have implications for how firms allocate investment spending across various investment opportunities.

To sum up, if national elections create variation in the option value of waiting to invest, we should observe cycles in corporate investment around the time of the election if investment projects have the following three characteristics:

1. political uncertainty creates uncertainty about future payoffs from the investment;
2. firms have some leeway with respect to the timing of the investment;
3. the investment project is at least partially irreversible or can only be undone by incurring a large cost.

These characteristics create a value of waiting to invest until all or part of the uncertainty is resolved. In the context of national elections, if political uncertainty matters for firms, then the repeated nature of the political uncertainty around elections should generate cycles in investment spending. This is an application of Bernanke's bad news principal in which the possibility of bad news induces a firm to wait on its investment projects. This leads to our first hypothesis:

H1: Investment expenditures are expected to decline in the year leading up to the election and increase shortly thereafter.

That is, we expect the average effect of electoral uncertainty to be a temporary decline in the conditional mean investment rate for all firms in the sample. However, it is unlikely that the electoral cycles are the same for every firm, country and election. The bad news principle also suggests that the



value of waiting to invest will vary from firm to firm and across countries. Even within countries and firms, the size of the cycle may vary across elections. The incentive to wait depends on the volatility of the outcome or the degree of uncertainty. In the call option analogy, the option value of waiting to invest is increasing in the volatility of the underlying asset. In the case of elections, the magnitude and spread of possible outcomes will generate heterogeneity in the size of observed investment cycles. This principle leads to our next three hypotheses:

H2: Across countries, investment cycles are expected to be more pronounced in countries with a higher probability of policy changes or a higher variation in possible policy outcomes after the election.

Countries in which the potential for large policy changes should experience larger investment cycles in election years. For example, countries in which political decisions are more constrained by various checks and balances are less likely to experience large policy swings following a change of power. The general political system may matter as well. Presidential systems are typically assumed to have greater checks and balances but less flexibility in policy making relative to Parliamentary systems<sup>3</sup>. In addition, the outcome of elections in parliamentary systems may be more uncertain as the party with the most votes doesn't necessarily win power as coalitions may form among minority parties. We also expect that countries with less stable systems in general will generate larger effects around elections.

H3: Within countries, the drop in investment expenditures will be larger when the outcome is more uncertain. In particular, we expect that cycles will be more pronounced for elections with close outcomes relative to those with large margins of victory.

The amount of uncertainty about the election outcome is unobservable, but we do observe the election results in terms of voting counts. We will make the assumption that the closeness of the resulting vote count is correlated with the degree of electoral uncertainty and examine whether investment cycles vary across elections within countries.

H4: There will be variation across industries and firms in terms of the magnitude of investment reductions in the election year. Specifically, investment cycles will be more

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<sup>3</sup>see Stepan and Skach (2003) for a general discussion of the trade-off between presidential and parliamentary systems.

pronounced for firms in politically sensitive industries, firms with higher capital intensity, and firms in less competitive industries. Investment cycles will be dampened for firms with financial constraints.

Different firms should have different sensitivities to political uncertainty. A defense firm arguably has more riding on political outcome than a toothpick manufacturer, for example. In general we expect that certain industries are more sensitive to political outcomes than others. Also, some firms should be more sensitive to fluctuations in political uncertainty. The degree to which investments are irreversible is an important determinant of whether a firm should wait for uncertainty to resolve before investing. As such, we rank firms according to their level of capital intensity. We also expect that the value of waiting to invest is lower in more competitive industries as there is potential to lose a first-mover advantage when growth opportunities are high. There are also reasons that suggest that the degree of financial distress can influence the time value of waiting to invest. Boyle and Guthrie (2003) demonstrate that when a firm is liquidity constrained, uncertainty over future cash shortfalls actually lowers the value of waiting to invest and increases investment. We employ various measures of financial constraints and investigate whether constrained and unconstrained firms behave differently during investment years. Finally, we compare firms with more domestic-dependent revenues to firms that have a high proportion of revenues coming from abroad. Firms that are more domestic-dependent may be more sensitive to changes in domestic policy, while firms with revenues coming from abroad may be more sensitive to possible changes in trade policy. It is therefore an empirical question as to which type of firm will be more sensitive to electoral uncertainty.

### **III. Data Description**

This study considers 248 national elections in 48 countries between 1980 and 2004 whose outcome determined the national leader directly or indirectly. We start with all country-year observations available in Thomson Financial's Worldscope database between 1980 and 2004. Worldscope provides the broadest coverage of international data, covering companies in more than 50 developed and emerging markets and accounting for more than 96 percent of the market value of publicly traded companies

across the globe. *Worldscope* contains firm characteristics data going back to 1980, but the availability varies by country. We match firm information with the election and country data for our analysis.

The detailed election information is obtained from a variety of sources. A major source for election/ regime change data is the Polity IV database maintained by the Center for International Development and Conflict Management at the University of Maryland. This database contains annual information on the regime and authority characteristics of all independent states (with total populations greater than 500,000). A second major source of information is the World Bank Database of Political Institutions. This source contains information about electoral rules, classification of political platforms, and time-varying measures of checks and balances. The election data are supplemented using various internet sources.<sup>4</sup> Additionally, country economic risk measures are obtained from International Country Risk Guide (ICRG) produced by Political Risk Services and the GDP data are taken from World Bank. The appendix A provides a comprehensive description of variables and data sources.

The first task for election data collection is to identify the chief executive of each country and the national elections associated with the selection of the chief executive. In a country with a presidential system, supreme executive power is normally vested in the office of the president. Thus, presidential elections are naturally considered in our analysis for countries with presidential systems. In a parliamentary system, the executive power is normally vested in a cabinet responsible to parliament. In such a country, the prime minister, or premier, being the head of the cabinet and leader of the parliament, functions as the actual chief executive of the nation. Thus, legislative elections are utilized for countries with parliamentary systems as the outcome of the legislative election has the foremost influence over the leader of the majority party or coalition being appointed prime minister.<sup>5</sup> Some countries use a hybrid system combining elements of both parliamentary and presidential democracy; a president and prime minister coexist with both presidential and legislative elections held nationally. In such cases, the constitutional framework and practice is studied to understand how the executive power is divided between the two leaders, and the election associated with the leader who exerts more power over executive decisions is selected accordingly. The appendix B describes in detail the process of classifying

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<sup>4</sup>The internet sources include <http://www.cidcm.umd.edu/polity/data/>, <http://www.binghamton.edu/cdp/era/searchera.html>, and <http://www.electionresources.org/>.

<sup>5</sup>When a bicameral government holds a separate general election for each of its two parliamentary chambers, the election associated with the more powerful chamber of the two is considered.

systems and selecting elections. As a robustness check, we later repeat our analysis excluding the four countries for which the classification requires some discretion.

The resulting data set comprises thirty one countries with legislative elections, sixteen with presidential elections, and one country (Israel) with prime ministerial elections.<sup>6</sup> Table I presents key firm characteristics for each of the 48 countries in our sample. Table II reports political system as well as the type and the number of elections utilized in the analysis for each country. The table also shows the origin of each country's legal system, which is taken from La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998). The sample includes 15 countries with English origin, 17 with French origin, 6 with German origin, and 4 with Scandinavian origin.

Table III summarizes the characteristics of the election data. Elections are held on average every 3.8 years and the average term of a chief executive is 4.4 years. The next row reports the political platform of incumbent governments in the election years. The World Bank classifies a government as being right-leaning if the political party is defined as conservative, Christian democratic, or right-wing. Left-leaning parties are those that are defined as communist, socialist, social democratic, or left-wing. Centrist parties are those that advocate strengthening private enterprise in a social-liberal context. According to the World Bank's classification, 43.1% of the incumbent administrations in the year leading up to an election is right-leaning, 36.7% left-leaning, and 20.2% centrist. We then document historical vote turnouts to examine the closeness of races. The winner of an election garners 41.9% on average, the runner-up 28.7%, and the third-placer 12.2%. The breakdown of votes according to the type of elections indicates that legislative elections tend to be won by narrower margins. The winner of a presidential election garners on average 17.5% more votes than the runner-up, collecting a total of 51.9% of the votes whereas the victor of a legislative election receives only 12.1% more than the runner-up, acquiring a total of 38.9% (untabulated). The narrower victory margins suggest that election outcomes are more uncertain around legislative elections. This is also consistent with the observation that parliamentary systems often operate with a larger number of influential political parties, each with a smaller fraction of the total electoral support.<sup>7</sup>

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<sup>6</sup>Israel has an exceptional parliamentary system in that it previously elected prime minister directly, separate from the general elections. After three direct elections for the prime ministership, however, it went back in 2001 to the earlier practice, in which the governing coalition's leader sits as prime minister.

<sup>7</sup>For instance, Stepan and Skach (1993) report that pure presidential countries had much fewer effective political parties than did pure parliamentary countries for their sample period.

Next, the database of Political Institutions provides various measures of the degree of effective checks and balances in a given political system on an annual basis<sup>8</sup>. The basic idea is to capture the number of decision makers whose agreement is necessary for the approval of policy changes. The measure is a count of the number of veto players in the political system at any point in time based on electoral rules and law. It also takes into account whether the executive and legislative branches of government are controlled by the same party, which effectively reduces the degree of checks and balances relative to having different parties controlling different branches of government. In presidential systems, the count is increased by one for the president and increased by one for each additional legislative body. For parliamentary systems, the measure is increased by one for the prime minister and by the number of parties included in the governing coalition. The number is reduced if the party of the executive is the same as the largest party in any particular chamber of government. Table III shows that our sample receives average checks of 3.95 with the standard deviation of 1.95.

Finally, we note that the timing of some legislative elections may not be entirely exogenous. A government under the parliamentary system can be dissolved before the expiry of its full term for various reasons, and an election is then normally called to form a new government. Presidential elections, by contrast, are generally held on a regular schedule. Ito (1990) documents that Japanese general elections have coincided with the periods of economic expansion, suggesting that the government opportunistically selected the timing of elections. In this study, elections are sorted into subgroups based on whether they are held as scheduled or not to account for the possible endogenous timing. An election is classified as regular if it is held within six months before or after the anticipated election date, which is calculated by adding the nominal term of the chief executive to the previous election date. Otherwise, an election is classified as irregular. According to this classification, 63.7% of the elections are regular. We also document that 54% of the elections lead to the replacement of the national leader and 43% of the elections result in change in the ruling party.

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<sup>8</sup>For details on the construction of the checks and balances index, see Beck, Clarke, Groff, Keefer and Walsh (2004).

## IV. Empirical Results

This section documents findings on corporate investment around electoral cycles. We begin with the discussion of the univariate results, which is followed by the examination of corporate investment in the multivariate framework controlling for variation in country and firm characteristics. We then exploit variations in sensitivity of investment to political uncertainty across countries, elections, and firms. Finally, we address possible concerns relating to our empirical analysis in the robustness checks section.

### A. Cycles in Corporate Investment

Panel A of Table IV summarize mean investment rates around elections. In non-election years, the unconditional average investment rate, measured by ratio of capital expenditures to beginning-of-year assets, is 0.0724. The rate drops by 0.0031 to 0.0693 in election years. This reduction, statistically significant at the 1% level, represents a 4.3% drop in the unconditional mean investment rate in the overall sample of firms. This univariate analysis provides preliminary evidence that political uncertainty creates investment cycles.

We then investigate corporate investment policy in a multivariate setting to control for firm characteristics and economic conditions. We utilize the following augmented version of the basic investment-Q specification to evaluate the change in corporate investment:

$$I_{ijkt} = \beta_i + \beta_1 \text{Election Dummy}_{jt} + \beta_2 Q_{ik,t-1} + \beta_3 CF_{ijk,t-1} + \beta_4 \% \Delta GDP_{j,t-1} + \varepsilon_{ijkt}, \quad (1)$$

where  $i$  indexes the firm,  $j$  indexes the country,  $k$  indexes the 3-digit SIC code industry classification, and  $t$  is the time index. The dependent variable, investment, is defined as capital expenditures scaled by beginning-of-year book value of total assets. The variable of our interest is the election dummy, which takes a value of one in the year leading up to the election outcome. Specifically, we define the election year dummy as follows to capture the effect of uncertainty on investment: the dummy takes a value of one for any firm-year in which the election date is no earlier than 45 days prior to the fiscal

year end in year  $t$  and no more than 274 days after the year  $t$  fiscal year end.<sup>9</sup> Figure 1 illustrates the procedure we use to classify election years. The coefficient of the election dummy,  $\beta_1$ , is expected to capture changes in the conditional investment rate around national elections, controlling for firm and economic conditions. We attempt to properly benchmark the conditional mean investment rate for a firm by controlling for changing firm characteristics or growth opportunities. Control variables include Tobin's Q, cash flow, and lagged GDP growth. We use the industry median market-to-book asset ratio each year as the proxy for Tobin's Q in the regression.  $CF_{ijk,t-1}$  is the beginning of year cash flow for each firm, defined as earnings before interest and taxes plus depreciation and amortization minus interest expense, taxes, and cash dividends, scaled by the beginning-of-year total assets. Finally, to capture the effects of general economic conditions on firm investment, we include the lagged value of GDP growth measured as the percentage change in real gross domestic product in the year prior to the investment decision. We winsorize main firm characteristics variables including investment and cash flows at 1% and 99% throughout the paper.

Panel B of Table IV reports various multivariate results. The first column shows that investment rate drops by 0.0029 in election years, controlling for growth opportunities proxied by Tobin's Q. The magnitude of the investment reduction is similar to that of the univariate result of 0.0031. We rely on the investment-Q framework as our baseline specification as it has a solid theoretical foundation as well as good empirical support relative to other investment regression models. Eberly, Rebelo and Vincent (2008) find that simple investment-Q regressions perform well relative to other common empirical models. However, there are still concerns about measurement error in Q that are difficult to overcome using the Worldscope data as it is impossible to construct the usual proxies for the replacement cost of capital. To deal with these potential problems, we include in the second regression cash flow in addition to Q to help capture growth opportunities that may not be captured by the market-to-book asset ratio. Additionally, the inclusion of firm fixed-effects (Reg.6) controls for any time-invariant measurement error in Q. In the third regression, we add lagged GDP growth to control for the country-specific economic conditions. The last three regressions add country and industry dummies and firm-fixed effects to the baselines specification. Country dummy controls for time-constant institutional differences across countries. Across all specifications in Table IV, we find that investment is positively

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<sup>9</sup>The results are robust to various cutoff points for the election dummy definition.

related to  $Q$ , cash flow, and economic growth. Consistent with the hypothesis that political uncertainty dampens investment rates in election years, investment reduction in election years captured by  $\beta_1$ , the coefficient on the election dummy, is economically meaningful and statistically significant at the 1% level. Decreases in conditional investment rates range between 0.0029 and 0.0056 depending on the specifications. The last regression (Reg.6) of Table IV, which serves as our full baseline specification throughout the rest of the paper, shows that investment rates decline by 0.0038 in the election year, controlling for growth opportunities and economic conditions. This translates to a 5.3% reduction in investment relative to the average non-election investment rate across all countries.

We also estimated other specifications for the investment regressions and the results are found to be very robust to choices of specification, including using the firm's own market-to-book as a proxy for  $Q$  and estimating regression equations with a large number of other firm characteristics, such as size, leverage, profitability, and cash holdings.<sup>10</sup> This suggests that the uncertainty associated with national elections around the world imposes a significant cost on firms. To pin down the effect of political uncertainty on corporate investment, we split up in the next sections the overall international sample into various subsamples to examine variations in uncertainty across countries, firms, and elections.

## **B. Subsample Analysis**

Having documented the average investment effect, we further our analysis by incorporating variation in the degree of uncertainty across elections. Uncertainty over an election outcome stems from the spread between possible outcomes and the probability of each outcome. Given the spread of outcomes, however, the effect on corporate decisions would vary across different political and economic institutions as well as different firm and industry characteristics. Within an institution, the degree of uncertainty would vary across elections depending on the closeness of an election race. In this section, we exploit such variation from three directions: countries, elections, and firms.

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<sup>10</sup>Results are not included in the tables but are available from the authors upon request.



## **B.1. Variation Across Countries**

In order to incorporate the differences in political institutions and economic stability across countries, we split up countries by legal origin, political system, degree of checks and balances, and economic risk. In the first cut, we examine differential effects of elections on investment rates by legal origin. The test is motivated by the law and finance research documenting that a legal origin affects the way firms operate through the legal rules and law enforcement (La Porta et al (1997, 1998, 1999)). Especially, drawing from the observation that common law countries are characterized with stronger investor protections, it is reasonable to expect that these protections are likely to remain intact even after a transfer of political power, limiting the range of potential outcomes. We expect the effect on investment to be larger when uncertainty is highest to the extent that political/electoral uncertainty is driving the investment cycles. Hence, we predict that investment cycles will be more pronounced in civil law countries. In the second cut, we examine elections in countries with presidential systems against those with parliamentary systems. These two types of political systems have different costs and benefits that are directly related to the degree of political uncertainty during election years. Presidential systems are characterized by a high degree of checks and balances which minimizes large swings in policy and acts as a constraint in passing new laws and regulations. Parliamentary systems on the other hand are characterized by uniform changes in control at both the executive and legislative branches of government. It is thus expected that parliamentary systems have a higher propensity for large policy swings, generating more pronounced investment cycles than do presidential systems. Additionally, we employ a direct measure of checks and balances to capture the impact of varying degrees of political uncertainty on corporate policy. This measure counts the number of veto players in a political system, adjusting for whether these veto holders are independent from each other in terms of electoral rules, party affiliation, and electoral competitiveness. Thus, this measure contains some time series variation within countries, even though electoral rules and legal institutions are largely fixed over time. We expect that firms operating in a country with a higher rating of checks and balances to be less sensitive to the electoral cycles since the turnover in power around elections are likely to have a lower impact on actual changes in policy. Finally, we hypothesize that countries with higher economic risk are more vulnerable to election outcomes, resulting in more investment reduction during election years. In countries with well established economic systems there is less of a chance that government policy will radically

shift in an unfavorable manner. We obtain monthly risk measures over our sample period from Political Risk Services' *International Country Risk Guide* (ICRG). The risk ratings are based on an integer point scale, with larger numbers being associated with lower risk. These risk ratings have been found to be correlated with future equity returns and equity valuations around the world (Erb, Harvey and Viskanta (1996)). A nice feature of the ICRG ratings is that there is some time-series variation in risk ratings as they are reported on a monthly basis. To match the risk ratings with each firm-year, we average the monthly ratings over each matching firm's fiscal year.

Table V shows the results of the investment regressions allowing for variation across countries. The coefficient on the election dummy is negative and significant across all the regressions. Some very interesting results emerge from Table V. The first column of the table reports the estimation results for the subsamples formed based on legal origins. A common law indicator variable is set to one for countries with English origin and zero for countries with French, German, or Scandinavian origin. The common law variable is interacted with all independent variables in the baseline specification to allow for differences across countries with different legal origins. The coefficient of *CommonLaw*  $\times$  *Election* is positive and significant, indicating that common law legal systems attenuate the negative effect of election uncertainty on corporate investment. This result is consistent with our prediction that stronger investor protection in common law countries would limit the potential impact of election outcomes on corporate decisions. Estimation results for the interaction terms between common law variable and the rest of the independent variables are not reported. The second column of the table reports results comparing different political systems. The presidential dummy is set to one for countries with a presidential system and zero for those with parliamentary systems. The presidential dummy is interacted with all right-hand side variables in the same manner as in the first regression. The coefficient of *Presidential*  $\times$  *Election*, 0.0053, means that firms in parliamentary system countries lower investment more than those in presidential system countries by 0.0053. The result suggests that while both parliamentary and presidential elections are characterized by significant reductions in investment during the election year, investment cycles appear to be more pronounced in countries with legislative elections. The third column shows that checks variable interacted with election dummy has positive and significant coefficient, suggesting that those with higher checks exhibit less pronounced investment cycles, consistent with our conjecture. The final column reports changes in the investment rates conditioning

on time-varying country economic risks. Since the ICRG ratings are decreasing in riskiness we expect the coefficient on the interaction term to be positive if the political cycles are more pronounced in countries with higher economic risk. We find that the coefficient of the interaction term is positive and significant, consistent with our conjecture.

## B.2. Variation Across Elections

In this section, we examine whether the impact of political uncertainty varies across elections within a country. First, if the outcome of an election is anticipated well in advance, there would be very little uncertainty associated with that election and therefore we expect that investment would not drop significantly during the election year. If the outcome is highly uncertain, however, we expect the effect on investment to be large. While the degree of uncertainty prior to the election outcome is unobservable and we do not have good polling data for all of the countries in the sample, we can observe the vote turnouts from the election day and use the results to classify elections as being close or not in doubt. Accordingly, we set a close election dummy to one if the margin of victory is smaller than the first quartile value of the margin distribution, where the margin of victory is computed as the difference between the fraction of votes won by the victor and that garnered by the runner-up. We then interact this dummy variable with the election dummy and estimate the investment regressions. Alternatively, we use the median value of the margin distribution as a cutoff point to define a close election variable. The test results remain qualitatively same with the different cutoff point and hence are not reported.

The first column of Table VI reports that the interaction term,  $Close \times Election$ , has a negative and significant coefficient, indicating that the dampening effect of elections on investment is stronger for close elections than for elections with larger margins of victory. Investment around close elections drops by 0.0068 ( $=0.0024+0.0044$ ) relative to non-election years. That is, the investment cycles are roughly three times as deep for close elections compared to elections with larger margins of victory, controlling for growth opportunities, economic conditions, and firm fixed effects. We then check the robustness of the result by exploring whether this result is driven by a spurious correlation between country characteristics and the margin of victory. For instance, the margin of victory tends to be smaller for legislative elections than for presidential elections; the victor of parliamentary elections acquires

12.1% more on average while the winner of the presidential elections garners 17.5% more during our sample period. Therefore it is possible that the type of a political system rather than the closeness is driving the results. We interact the closeness variable with the presidential dummy in the second column of the table and find that the interaction term has a coefficient of 0.0001, which is economically negligible and statistically insignificant as well. The effect of closeness of an election becomes stronger after the inclusion of presidential dummy with its coefficient almost doubling in size. The third column present the result of a common law dummy interacted with the closeness variable. The point estimate of the interaction term,  $Close \times CommonLaw$ , is -0.0035, which is statistically insignificant. The effect of close elections survives the inclusion of such interaction term, as indicated by a negative and significant coefficient of -0.0038.

Secondly, we investigate whether political philosophy of the incumbent government would affect the degree of the effect of electoral uncertainty on investment. If a market friendly government is already in place, then the election outcome will be viewed as either neutral (incumbent wins) or negative (incumbent loses). On the other hand, if a more socialist government is already in place, then from the perspective of the private sector the outcome will either be neutral (incumbent wins) or positive (incumbent loses). In such a setting, the bad news principle works in the former case more than in the latter. In order to test this hypothesis, we sort elections by the political philosophy of the incumbent leader of state prior to the election. The World Bank classifies a government as being right-leaning if the political party is defined as conservative, Christian democratic, or right-wing. Left-leaning parties are those parties that are defined as communist, socialist, social democratic, or left-wing. Centrist parties are those that advocate strengthening private enterprise in a social-liberal context. To the extent that the right-leaning incumbents are more market friendly, we expect deeper investment cycles when market-friendly governments are in power. The last column of the table (Reg. 4) adds a right leaning dummy variable to the investment regression. The right leaning dummy equals one if the incumbent government is classified as right-leaning and zero otherwise. The interaction between right leaning and election is negative and significant, consistent with our prediction that investment cycles would be more pronounced when right leaning government is in power in the election year. It appears that firms view a transition from right to left as having more potential bad news than a possible left-to-right transition

of power. However, we interpret this result with caution as it depends on the classification of political philosophy being highly correlated with market-friendly economic policies.

### **B.3. Variation Across Firms**

In this section, we take advantage of our firm-level data and exploit variation across firm and industry characteristics. Firms are likely to differ from each other with respect to their sensitivity to electoral uncertainty. First, we hypothesize that election-induced investment cycles are deeper in politically sensitive industries. In order to test this conjecture, we make a subjective assessment of the degree of political sensitivity for each industry based on previous studies on politics and finance/economics. Our classification of sensitive industry includes agriculture, agricultural services, beer & liquor, Tobacco products, pharmaceuticals, health care services, defence, petroleum and natural gas, telecommunications, and transportation. We set a sensitive industry dummy to one if a firm belongs to a politically sensitive industry. Secondly, we expect that capital-intensive firms would respond more to electoral uncertainty as investment in fixed assets such as property, plant, and equipments is generally more costly to reverse than non-capital-intensive investment such as labor. Capital intensity is measured by the ratio of fixed assets to total assets or sales (Francis, LaFond, Olsson, and Schipper (2004)). A capital intensity dummy is set to one if a firm's capital intensity is higher than the median value.

Next, we conjecture that investment in a monopolistic industry will exhibit stronger electoral cycles. It is likely that the first mover advantage in a competitive industry is so big that a firm can ill afford to wait until the uncertainty is resolved. In such cases, the cost of waiting would outweigh the benefit of additional information gained by waiting. We employ industry Herfindahl indices to measure the competitiveness of an industry  $j$  as follows:

$$H_j = \sum_{i=1}^{N_j} \left( \frac{S_i}{S_j} \right)^2,$$

where  $S_i$  is the sales of firm  $i$  in industry  $j$  and  $S_j$  is the sum of sales of all firms in industry  $j$ .  $N_j$  is the number of firms in industry  $j$ . Herfindahl index is calculated on 3-digit SIC codes within country each year. More competitive industry is assigned a lower value of Herfindahl index. In essence, the index

measures whether the aggregate sales of an industry are concentrated on a few major players or spread across a large number of firms.

Another firm characteristics of interest is the degree of financial constraints. We expect that uncertain future funding would lower the value of a firm's option to wait and encourage the firm to expedite investment (Boyle and Guthrie (2003)). We employ two measures of financial constraints: firm size and dividend policy. First, small firms are likely to be more subject to capital market imperfections since they tend to be young and less well known. A small firm dummy is set to one if the firm size is smaller than the median of the sample firms in a given year. Secondly, dividend policy is considered an indicator of a company's financial condition. As the dividend payment is typically viewed as a long-term commitment by the investors, liquidity plays an important role in dividend decisions. A dividend payer dummy equals one if a firm pays dividend, and zero otherwise.

Finally, we explore whether export dependence affects the sensitivity of investment to electoral uncertainty. We test two opposing hypotheses. On one hand, we expect less of an effect among the export-dependent firms since a large proportion of revenues are coming from areas unaffected by the election outcome. On the other hand, export-heavy firms may be much more sensitive to particular types of government policies, especially those related to international trades and hence face more uncertainty than export-light firms. Which of the two effects dominates the investment decisions is an empirical question. We define export dummy such that the dummy is set to one if the proportion of exports to total sales is positive, and zero otherwise. Roughly 12% of firm-year observations fall into the export-heavy category. Alternatively, we define a firm as export-heavy if more than 25% of its sales come from exports. The test results remain qualitatively same with the alternative definition of export dependence (untabulated).

Table VII reports estimation results for various subsamples formed based on different firm characteristics. We interact each of the six measures of firm characteristics with all the explanatory variables in investment regression specifications. Only the interaction with the election dummy is reported. The coefficient on the election dummy is negative and significant across all the regressions. The first column of Table VII reports that the coefficient of the interaction between sensitive industry and election year dummy is negative and statistically significant at the 10% level, providing some evidence sup-

porting our conjecture that politically sensitive industries exhibit deeper investment cycles induced by elections. The second column reports that the interaction term between capital intensity and election dummy is negative and significant at the 5% level. The result suggests that capital-heavy companies reduce investment more during elections years, consistent with our hypothesis that capital intensive investment is more costly to reverse. The next estimation result, however, shows that the interaction term between Herfindahl index and election dummy is not significantly different from zero. In other words, investment policies in competitive industries are not different from those in monopolistic industries in election years to the extent that the Herfindahl index captures the intensity of industry competition.

The results on financial constraints are mixed. The interaction term between small firms and election dummy is positive and significant, indicating that small firms respond less to electoral uncertainty by 0.3% of lagged total assets. This result is consistent with our prediction that financial constraints limit a firm's flexibility in terms of investment timing. On the other hand, the interaction between dividend payer and election dummy is not significantly different from zero, meaning that investment decisions made by dividend payers are not different from those by non-dividend payers. The last column of the table report that the interaction between export and election dummy is 0.0025, which is statistically significant at the 5% level. The result reveals that export-dependent firms tend to cut back on investment to a much lesser degree compared to those with no or little exports. In fact, the magnitude of investment reduction for export-heavy firms are approximately half of that for export-light firms: export-heavy firms reduce investment by 0.19% of lagged assets while export-light firms reduce by 0.44%. The evidence clearly favors the former hypothesis that export-dependent firms are less sensitive to the changes in domestic demand resulting from election outcomes.

### **C. Robustness Checks**

Table VIII reports the results for some robustness tests. The first two columns report the results from Arellano-Bond regressions with lagged values of investment and firm fixed-effects. Lagged investment have been found to be correlated with contemporary investment in many data samples and there is some concern that autocorrelation in capital expenditures may contribute to the political cycles documented in this paper. We estimate the investment regressions using the Arellano-Bond dynamic panel regression

estimation method to obtain consistent estimates of the parameters in the case of panel data with lagged dependent variables. We allow for both one lag and two lags of investment. The results in Table VIII confirm that the investment cycles are robust to the inclusion of lagged investment.

Next, we turn our attention to the potential endogeneity of election timing. We first examine the lagged GDP growth to compare the economic conditions around regularly scheduled elections against those around early elections. We then proceed to control for the effect of early elections in a regression framework. Table IX summarizes economic growth rates in election years for the countries in our sample. We calculate two types of summary statistics. First, we assign equal weights to each country-year observation. Since we have unequal numbers of firm-year observations across countries, we also calculate a sample-weighted average of GDP growth. The patterns are roughly the same in both cases. We observe that over the 1980 to 2004 period, the average sample-weighted average GDP growth was 4.70%. GDP growth tends to be higher in election years, averaging 5.51% compared to 4.48% in non-election years. Also note that GDP growth during regularly scheduled elections is 4.19%, while GDP growth during early elections is 6.98%, consistent with Ito's (1990) result that Japanese elections tend to be called early during good times. This suggests that the potential endogeneity of election timing acts as a bias against the effects of political uncertainty as firm investment is positively correlated with GDP growth around the world. We then obtain investment regression estimates when we consider only those elections that are anticipated in advance (third column of Table VIII). These include elections that are timed on a constitutional basis as well as elections that are held within 6 months of the expiration of the current government. Thus, we are excluding any election that may have been called early. The results are not driven by early elections; the investment cycles are present in regularly scheduled elections as well, where the timing of the elections is purely exogenous.

In the fourth column, we estimate the regressions omitting the nine Asian countries that were involved in the financial crisis of the late 1990s. Since 7 of these countries experienced elections during the financial crisis, there is some concern that the financial crisis itself could be generating the results. After eliminating the Asian countries, the results remain intact.

We also consider the possibility that the results may be driven by a "lame duck" effect. That is, a leader who is not up for re-election due to term limits or other constraints may not have any incentive



to focus on economic policy or may even pass detrimental policy to tie the hands of his or her successor (Drazen (2000)), depressing investment in the election year. To deal with this concern, we estimate the investment regression after removing the elections in which the incumbent is not a candidate. The last column of Table VIII reports the results. The investment cycle does not appear to be affected by the removal of lame-duck years from the sample.

In results not reported here<sup>11</sup>, we also estimated the regression equation using different time periods, different proxies for growth opportunities, additional firm controls, and different measures of investment (capital expenditures plus R&D and growth in total assets). The results are robust to these variations in approach.

## V. Investment Rates and Cash Holdings

Our final empirical analysis considers the cash holdings behavior of firms around national elections. There are various reasons why firms may hold cash on their balance sheet, including a precautionary motive and transactions motive. Opler, Pinkowitz, Stulz and Williamson (1999) find evidence among US firms that the precautionary motive for holding cash is very strong. In this section, we ask what happens to the cash that would have been invested in the absence of an election. Since investment declines during election years given cash flows and growth opportunities, we might expect that firms have more cash than usual which they hoard on a precautionary basis until the election is resolved. This question is complicated by the fact that investment decisions and cash holding choices are made jointly. To get a handle on the joint investment/cash holdings decisions around elections, we estimate the following system of equations:

$$\begin{aligned}
 I_{ijkt} &= \beta_0 + \beta_1 \text{Election Dummy}_{jt} + \beta_2 Q_{ik,t-1} + \beta_3 CF_{ijk,t-1} + \beta_4 \% \Delta GDP_{j,t-1} + \varepsilon_{ijkt} \\
 \text{Cash}_{ijkt} &= \beta_0 + \beta_1 \text{Election Dummy}_{jt} + \beta_2 Q_{ik,t-1} + \beta_3 CF_{ijk,t-1} + \beta_4 \text{Size}_{ijk,t-1} + \beta_5 LEV_{ijk,t-1} \\
 &\quad + \beta_6 I_{ijkt} + \beta_7 \sigma(CF)_{kt} + \beta_8 DIV_{ijkt} + \alpha_j + \eta_{ijkt},
 \end{aligned}$$

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<sup>11</sup> Available upon request.

where the right-hand side variables in the investment equation are defined as previously. The cash regression incorporates control variables common in the cash holdings literature, including firm size (log of real total assets), leverage (book value of debt scaled by total assets), cash flow volatility, and dividend policy. Cash flow volatility ( $\sigma(CF)_{kt}$ ) is calculated as the time series standard deviation of 3-digit SIC cash flows over the previous 4 years.  $DIV_{ijkt}$  is a dummy variable set equal to one if the firm pays a dividend in year  $t$  and zero otherwise, and the  $\alpha_j$  captures country fixed effects. The cash regression depends directly on investment, but the investment regression can be estimated independently as it does not explicitly depend on cash holdings. The model is over-identified, so we estimate the system using three-stage least squares to obtain efficient estimates. Once the estimates are obtained, we compare the magnitudes of the coefficients on the election dummy across the two equations.

Table X presents the results from the simultaneous equations estimation. The estimates from the investment regression are consistent and similar with the earlier single-equation results. The cash holdings regression yields some very interesting results. First, firms appear to save cash during election years. Controlling for other factors, cash holdings increase by 0.0067 in election years. This represents a 5% increase in cash holdings relative to the non-election year average across all firms. Another interesting finding is that the increase in cash holdings almost exactly offsets the reduction in investment rates in the election year. The reduction in investment is 0.0062 compared to the increase in cash holdings of 0.0068 in the year leading up to the election. Table X confirms that this difference is not statistically significant. These results suggest that political uncertainty leads firms to cut back on investment and temporarily increase cash holdings until the election uncertainty is resolved.

## VI. Conclusion

We have investigated whether political uncertainty matters for corporate financial decisions in the context of national elections. Increasing policy uncertainty around elections creates incentives for firms to hold off on investment until the uncertainty is resolved and save more cash as a precaution against bad outcomes. We examine national elections in 48 countries over a 25 year period and document evidence suggesting that political uncertainty has a significant impact on corporate investment and cash

decisions. Controlling for firm, country and economic characteristics, we find that capital expenditures drop by an average of 5.3% in the period leading up the election period. Cash holdings increase by an average of 5% compared to cash holdings in non-election years.

We conduct subsample analyses exploring the differences in country characteristics. We document that the political cycles in investment are stronger in parliamentary systems relative to presidential systems, in countries with fewer checks and balances, and in civil-law countries. Countries with higher degrees of economic risk as measured by the ICRG country risk ratings are also found to exhibit deeper investment cycles around national elections. The second set of subsample analyses focus on variations across elections. Within countries, elections with more uncertain outcomes as measured by small margins of victory have a larger impact on corporate investment than elections with landslide victories. Also, investment reduction tend to be more severe when the incumbent government is market friendly as the possibility of a political shift to less market-friendly government represents a bad outcome for firms. In the final set of analyses, we find some interesting variation in investment cycles across firms. The cycles are more pronounced for firms in politically sensitive industries and firms with higher capital intensity. Also, the firms that receive a large portion of their revenues from abroad tend to be less sensitive to election uncertainty than those with mostly domestic sales. These results are robust to the choice of empirical specifications, various measures of growth opportunities, and over various time periods and subsamples.

Our results support two important ideas. First, politics matter for firms. Far from being a side-show, the political process and the possibility of policy changes influence the way firms make decisions. Second, uncertainty matters for corporate decisions. Changes in the degree of uncertainty lead to changes in investment expenditures, as hypothesized by Bernanke (1993). This finding has implications for other types of corporate decisions as well, such as the timing of IPOs and other securities issuance, mergers and acquisitions, international corporate diversification, and the timing of payout decisions.

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**Table I**  
**Summary Statistics: Mean Firm Characteristics Across Countries**

COUNTRY	Observations	Market-to-Book	Capex/Assets	Leverage	Cash/Assets	Exports/Sales
ARGENTINA	887	1.18	0.05	0.26	0.07	0.00
AUSTRALIA	12,226	1.67	0.07	0.16	0.19	0.00
AUSTRIA	1,916	1.27	0.05	0.23	0.11	0.07
BELGIUM	2,916	1.26	0.05	0.22	0.14	0.01
BRAZIL	3,674	1.06	0.05	0.26	0.09	0.03
CANADA	15,599	1.67	0.08	0.22	0.13	0.04
CHILE	1,922	1.27	0.05	0.21	0.07	0.01
COLOMBIA	430	0.49	0.00	0.00	0.00	0.00
CZECH REPUBLIC	508	0.91	0.06	0.15	0.07	0.11
DENMARK	3,700	1.24	0.05	0.24	0.13	0.10
FINLAND	2,553	1.23	0.08	0.28	0.11	0.05
FRANCE	14,692	1.32	0.05	0.22	0.13	0.03
GERMANY	14,472	1.40	0.06	0.19	0.11	0.03
GREECE	3,206	1.72	0.01	0.21	0.11	0.02
HUNGARY	386	1.09	0.07	0.14	0.10	0.10
INDIA	5,080	1.51	0.07	0.31	0.06	0.08
INDONESIA	3,003	1.23	0.05	0.34	0.12	0.11
IRELAND	1,386	1.49	0.05	0.21	0.13	0.02
ISRAEL	1,168	1.35	0.04	0.21	0.22	0.07
ITALY	5,025	1.14	0.04	0.25	0.11	0.01
JAPAN	52,495	1.29	0.02	0.25	0.17	0.02
LUXEMBOURG	499	1.24	0.04	0.19	0.14	0.00
MALAYSIA	8,301	1.40	0.05	0.24	0.11	0.00
MEXICO	1,801	1.17	0.05	0.23	0.08	0.02
NETHERLANDS	4,159	1.39	0.06	0.21	0.10	0.02
NEW ZEALAND	1,451	1.45	0.06	0.24	0.06	0.03
NORWAY	3,064	1.34	0.08	0.28	0.16	0.03
PAKISTAN	1,361	1.16	0.06	0.35	0.09	0.05
PERU	762	1.03	0.04	0.23	0.07	0.02
PHILIPPINES	2,119	1.24	0.05	0.21	0.11	0.01
POLAND	856	1.24	0.07	0.13	0.08	0.10
PORTUGAL	1,373	1.07	0.04	0.26	0.05	0.04
RUSSIA	388	0.88	0.05	0.13	0.06	0.02
SINGAPORE	4,952	1.28	0.05	0.20	0.16	0.00
SLOVAKIA	131	0.72	0.02	0.16	0.04	0.12
SOUTH AFRICA	5,742	1.50	0.06	0.15	0.12	0.00
SOUTH KOREA	7,652	1.00	0.05	0.33	0.13	0.07
SPAIN	3,249	1.22	0.04	0.21	0.09	0.03
SRI LANKA	269	1.05	0.05	0.26	0.08	0.05
SWEDEN	5,097	1.45	0.06	0.22	0.15	0.03
SWITZERLAND	4,504	1.31	0.04	0.24	0.14	0.00
TAIWAN	7,613	1.24	0.05	0.24	0.15	0.16
THAILAND	4,595	1.18	0.06	0.34	0.09	0.04
TURKEY	1,742	1.57	0.06	0.22	0.12	0.16
UNITED KINGDOM	36,050	1.59	0.06	0.18	0.13	0.02
UNITED STATES	50,257	1.70	0.06	0.24	0.12	0.02
VENEZUELA	376	0.79	0.04	0.13	0.10	0.01
ZIMBABWE	159	1.11	0.06	0.12	0.08	0.02

**Table II**  
**Political Systems and Election Type**

Country	Legal Origin	Basis of Executive Legitimacy	Type of Election	Number of Elections
AUSTRALIA	English	Parliamentary	Legislative	9
AUSTRIA	German	Parliamentary	Legislative	7
BELGIUM	French	Parliamentary	Legislative	7
CANADA	English	Parliamentary	Legislative	8
CZECH REPUBLIC		Parliamentary	Legislative	3
DENMARK	Scandinavian	Parliamentary	Legislative	8
GERMANY	German	Parliamentary	Legislative	8
GREECE	French	Parliamentary	Legislative	7
HUNGARY		Parliamentary	Legislative	4
INDIA	English	Parliamentary	Legislative	6
IRELAND	English	Parliamentary	Legislative	8
ITALY	French	Parliamentary	Legislative	6
JAPAN	German	Parliamentary	Legislative	9
LUXEMBOURG		Parliamentary	Legislative	4
MALAYSIA	English	Parliamentary	Legislative	5
NETHERLANDS	French	Parliamentary	Legislative	8
NEW ZEALAND	English	Parliamentary	Legislative	9
NORWAY	Scandinavian	Parliamentary	Legislative	7
PAKISTAN	English	Parliamentary	Legislative	5
PORTUGAL	French	Parliamentary	Legislative	3
SINGAPORE	English	Parliamentary	Legislative	6
SLOVAKIA		Parliamentary	Legislative	2
SOUTH AFRICA	English	Parliamentary	Legislative	5
SPAIN	French	Parliamentary	Legislative	7
SWEDEN	Scandinavian	Parliamentary	Legislative	7
SWITZERLAND	German	Parliamentary	Legislative	5
TURKEY	French	Parliamentary	Legislative	3
UNITED KINGDOM	English	Parliamentary	Legislative	6
ISRAEL	English	Parliamentary	Prime Ministerial	3
ARGENTINA	French	Presidential	Presidential	4
BRAZIL	French	Presidential	Presidential	2
CHILE	French	Presidential	Presidential	4
COLOMBIA	French	Presidential	Presidential	4
INDONESIA	French	Presidential	Presidential	1
MEXICO	French	Presidential	Presidential	4
PERU	French	Presidential	Presidential	4
PHILIPPINES	French	Presidential	Presidential	3
SRI LANKA	English	Presidential	Presidential	3
UNITED STATES	English	Presidential	Presidential	7
VENEZUELA	French	Presidential	Presidential	4
ZIMBABWE	English	Presidential	Presidential	2
FRANCE	French	Hybrid	Presidential	4
RUSSIA		Hybrid	Presidential	3
SOUTH KOREA	German	Hybrid	Presidential	4
TAIWAN	German	Hybrid	Presidential	3
FINLAND	Scandinavian	Hybrid	Legislative	6
POLAND		Hybrid	Legislative	4
THAILAND	English		Legislative	7



**Table III**  
**Election Summary Statistics**

This table reports various summary statistics for national elections held between 1980 and 2004 in 48 countries. Election data are obtained through various sources, including the Polity IV database from the Center for International Development and Conflict Management, the Database of Political Institutions from the World Bank, and hand collected from various sources. The Political Platform of Government category is from the World Bank. A government is classified as left-leaning if the party platform describes the party as socialist, communist, social democratic, or left-wing. Centrist governments are those controlled by a party that is thought to advocate private enterprise in a social-liberal context. An election is classified as a regular election if it is held within six months of the constitutionally required election date.

	Mean	Median	St.Dev.
Election Frequency (unit: year)	3.8	4.0	1.2
Length of Term (unit: year)	4.4	4.0	0.8
Political Platform of Government			
Right Leaning (%)	43.1		
Left Leaning (%)	36.7		
Centrist (%)	20.2		
Vote garnered in an Election			
Winner (%)	41.9	41.3	12.9
Runner-up (%)	28.7	27.9	10.1
Third place (%)	12.2	11.4	5.7
Type of Elections			
Legislative (%)	76.2		
Presidential (%)	22.6		
Checks and Balances Index	3.95	4.00	1.79
Proportion of Regular Elections (%)	63.7		
Change of Government Head (%)	54.3		
Change of Ruling Party (%)	43.3		

**Table IV**  
**Baseline Investment Regressions**

Panel A reports mean investment rates and the associated standard errors (in parenthesis) for election years and non-election years. Investment is defined as capital expenditures scaled by the beginning-of-year book value of total assets. Panel B reports estimates from regressions of the type:

$$I_{ijkt} = \beta_i + \beta_1 \text{Election Dummy}_{jt} + \beta_2 Q_{ik,t-1} + \beta_3 CF_{ijk,t-1} + \beta_4 \% \Delta GDP_{j,t-1} + \varepsilon_{ijkt},$$

where  $i$  indexes the firm,  $j$  indexes the country,  $k$  is an industry index, and  $t$  denotes the time period. The left hand side variable is investment expenditures divided by beginning-of-year assets. The election dummy takes a value of one in the year preceding the election; zero otherwise. Firm characteristics include cash flow and the world/industry median market-to-book ratio. Lagged GDP growth is also included in the regression. Standard errors are clustered by firm and reported in parenthesis.

Panel A: Mean Corporate Investment Rates

	Election	Non-Election	Diff (t-stat)
	0.0693	0.0724	5.91
	( 0.0005 )	( 0.0002 )	

Panel B: Multivariate Analysis

	Reg.1	Reg.2	Reg.3	Reg.4	Reg.5	Reg.6
Intercept	0.0209 *** ( 0.0010 )	0.0446 *** ( 0.0011 )	0.0440 *** ( 0.0011 )	0.0992 *** ( 0.0151 )	0.0929 *** ( 0.0151 )	0.0319 *** ( 0.0017 )
Election Year	-0.0029 *** ( 0.0005 )	-0.0051 *** ( 0.0007 )	-0.0056 *** ( 0.0007 )	-0.0040 *** ( 0.0007 )	-0.0039 *** ( 0.0006 )	-0.0038 *** ( 0.0006 )
$Q_{ik,t-1}$	0.0406 *** ( 0.0008 )	0.0140 *** ( 0.0009 )	0.0127 *** ( 0.0009 )	0.0136 *** ( 0.0009 )	0.0193 *** ( 0.0011 )	0.0238 *** ( 0.0013 )
Cash Flow $_{ijk,t-1}$		0.2034 *** ( 0.0041 )	0.2021 *** ( 0.0041 )	0.2004 *** ( 0.0041 )	0.1927 *** ( 0.0040 )	0.1778 *** ( 0.0047 )
GDP Growth $_{j,t-1}$			0.0535 *** ( 0.0030 )	0.0412 *** ( 0.0030 )	0.0404 *** ( 0.0029 )	0.0369 *** ( 0.0027 )
Country FE				YES	YES	
Industry FE					YES	
Firm FE						YES
N	235878	109753	109753	109753	109743	109753
Adj. $R^2$	0.0218	0.0814	0.0847	0.1119	0.1582	0.0820

**Table V**  
**Investment Regressions: Variation Across Countries**

These investment regressions add various measures of country characteristics to the baseline specification. Common law is a dummy variable which is equal to one if the firm operates in a common law country, zero if civil law country. Presidential Election is a dummy variable, which is equal to one if the type of election is presidential, zero if legislative. International Country Risk Guide (ICRG) economic risk is a time-varying measure of country economic risk with large numbers being associated with lower risk. Robust standard errors are in parenthesis.

	Legal Origin	Political System	Checks	ICRG Economic Risk
Election Year	-0.0099 *** ( 0.0008 )	-0.0067 *** ( 0.0007 )	-0.0044 *** ( 0.0016 )	-0.0238 *** ( 0.0079 )
Common Law×Election	0.0090 *** ( 0.0013 )			
Presidential ×Election		0.0053 *** ( 0.0016 )		
Checks×Election			0.0016 ** ( 0.0003 )	
Risk Rating×Election				0.0005 ** ( 0.0002 )
$Q_{ik,t-1}$	0.0159 *** ( 0.0012 )	0.0195 *** ( 0.0011 )	0.0107 *** ( 0.0011 )	0.0410 *** ( 0.0038 )
Cash Flow $_{ijk,t-1}$	0.2404 *** ( 0.0077 )	0.1866 *** ( 0.0050 )	0.1875 *** ( 0.0061 )	0.4277 *** ( 0.0177 )
GDP Growth $_{j,t-1}$	0.0353 *** ( 0.0034 )	0.0511 *** ( 0.0032 )	0.0621 *** ( 0.0072 )	0.0732 *** ( 0.0135 )
Intercept	0.0469 *** ( 0.0060 )	0.0469 *** ( 0.0060 )	0.0449 *** ( 0.001 )	0.0442 *** ( 0.0010 )
Industry FE	Yes	Yes	Yes	Yes
N	109,207	109,743	109,255	108,893
$R^2$	0.140	0.138	0.082	0.088

**Table VI**  
**Investment Regressions: Variation Across Elections**

Closeness is a dummy variable which is set to one if the vote difference is less than the first quartile value, and zero otherwise. Vote difference is defined as the difference between the proportion of the votes garnered by the winner and that received by the runner-up. Right Leaning equals one if the incumbent government in the year leading up to an election is right leaning, and zero if the government is left-leaning or centrist. Robust standard errors are in parenthesis.

	Closeness			Party Platform
	Reg.1	Reg.2	Reg.3	Reg.4
Election Dummy	-0.0024 *** (0.0007)	-0.0031 *** (0.0008)	-0.0083 *** (0.0010)	-0.0018 ** (0.0009)
Close×Election	-0.0044 *** (0.0010)	-0.0079 *** (0.0012)	-0.0038 *** (0.0014)	
Presidential×Election		0.0001 (0.0023)		
Close*Presidential		0.0038 (0.0028)		
Common Law×Election			0.0093 *** (0.0014)	
Close*Common Law			-0.0035 (0.0027)	
Right Leaning×Election				-0.0029 *** (0.0011)
Industry Median Q	0.0235 *** (0.0013)	0.0173 *** (0.0011)	0.0173 *** (0.0011)	0.0233 *** (0.0013)
Cash Flow	0.1776 *** (0.0047)	0.1938 *** (0.0040)	0.1927 *** (0.0040)	0.1779 *** (0.0048)
Lag(GDP Growth)	0.0368 *** (0.0027)	0.0519 *** (0.0029)	0.0503 *** (0.0029)	0.0369 *** (0.0028)
Industry Dummy		Yes	Yes	
Firm FE	Yes			Yes
N	109,753	109,743	109,207	107,699
<i>Adj. R</i> <sup>2</sup>	0.0824	0.1382	0.1381	0.0819

**Table VII**  
**Investment Regressions: Variation Across Firms**

These investment regressions add various measures of firm characteristics to the baseline specification. Sensitive industry takes a value of one if the firm belongs to a politically sensitive industry, and zero otherwise. Our classification of sensitive industry includes agriculture, agricultural services, beer & liquor, Tobacco products, pharmaceuticals, health care services, defence, petroleum and natural gas, telecommunications, and transportation. Capital intensity is measured by the ratio of fixed assets to total sales (assets). Herfindahl index is defined as the sum of squared sales ratio of all firms in the given industry in a given year and country, where the sales ratio is the sales of the firm divided by the sales of all firms in the industry, and industry is defined as 3-digit SIC codes. Small firm is a dummy variable which is set to one if the firm size is smaller than the median value in the given year, and zero otherwise. Dividend payer dummy is one if a firm pays dividend in the given year, and zero otherwise. High export dummy is set equal to one if export to sales ratio is positive, and zero otherwise. Robust standard errors are in parenthesis.

	Sensitive Industry	Capital Intensity	Herfindahl Index	Small Firms	Dividend Payer	Export Level
Election Year	-0.0034 *** (0.0007)	-0.0040 *** (0.0009)	-0.0054 *** (0.0013)	-0.0052 *** (0.0009)	-0.0056 *** (0.0013)	-0.0044 *** (0.0007)
Sensitive Industry × Election	-0.0031 * (0.0016)					
Capital Intensity × Election		-0.0011 ** (0.0005)				
Herfindahl Index × Election			0.0024 (0.0019)			
Size Dummy × Election				0.0030 ** (0.0013)		
Dividend Dummy × Election					0.0020 (0.0015)	
High Export × Election						0.0025 ** (0.0012)
$Q_{i,k,t-1}$	0.0117 *** (0.0008)	0.0448 *** (0.0008)	0.0170 *** (0.0009)	0.0095 *** (0.0008)	0.0191 *** (0.0008)	0.0193 *** (0.0011)
Cash Flow $_{i,k,t-1}$	0.1881 *** (0.0023)	0.2877 *** (0.0027)	0.1996 *** (0.0036)	0.2439 *** (0.0035)	0.1303 *** (0.0027)	0.1927 *** (0.0040)
GDP Growth $_{j,t-1}$	0.0389 *** (0.0030)	0.0551 *** (0.0033)	0.0438 *** (0.0047)	0.0321 *** (0.0035)	0.0298 *** (0.0048)	0.0403 *** (0.0029)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
N	109,391	108,653	109,285	109,391	109,391	109,743
R <sup>2</sup>	0.0847	0.1314	0.0829	0.0878	0.0974	0.0982

**Table VIII**  
**Robustness Checks: Dynamic Panel Regression Estimates and Sub-sample Regressions**

The first two columns report the results from Arellano-Bond dynamic panel regressions with lagged values of investment and firm fixed-effects. The next two columns report subsample regressions. First subsample regressions excludes irregular elections. Regular elections are defined as elections that take place within 6 months of expiry of the term of the government. The next subsample regression omits the nine Asian countries that were involved in the financial crisis of the late 1990s.

	Dynamic Panel Regressions		Subsample Regressions		
	One Lag	Two Lags	Regular Elections	Asian Countries	“Lame Ducks”
			Only	Omitted	Omitted
Election Year	-0.0017 *** ( 0.0006 )	-0.0020 *** ( 0.0006 )	-0.0020 *** ( 0.0007 )	-0.0034 *** ( 0.0007 )	-0.0055 *** ( 0.0006 )
$Q_{ik,t-1}$	0.0082 *** ( 0.0016 )	0.0071 *** ( 0.0016 )	0.0228 *** ( 0.0014 )	0.0206 *** ( 0.0012 )	0.0238 *** ( 0.0013 )
Cash Flow $_{ijk,t-1}$	0.1385 *** ( 0.0033 )	0.1333 *** ( 0.0034 )	0.1812 *** ( 0.0049 )	0.1658 *** ( 0.0027 )	0.1761 *** ( 0.0048 )
GDP Growth $_{j,t-1}$	0.0271 *** ( 0.0027 )	0.0268 *** ( 0.0027 )	0.0417 *** ( 0.0028 )	0.0354 *** ( 0.0030 )	0.0360 *** ( 0.0028 )
Investment $_{ijk,t-1}$	0.2968 *** ( 0.0047 )	0.3014 *** ( 0.0054 )			
Investment $_{ijk,t-2}$		0.0339 *** ( 0.0038 )			
Intercept	-0.0028 *** ( 0.0001 )	-0.0021 *** ( 0.0001 )	0.0330 *** ( 0.0018 )	0.0404 *** ( 0.0016 )	0.0320 *** ( 0.0017 )
Firm FE	Yes	Yes	Yes	Yes	Yes
N	76,658	66,524	99,207	81,960	107,142

**Table IX**  
**Real GDP Growth and Election Timing**

The table reports average percentage growth of real GDP relative to the previous year for various subsamples. Average GDP growth is calculated in two ways. First, equal-weighted average GDP assigns same weights to each country each year. Secondly, sample-weighted average assigns same weights to each firm-year observation.

<i>Equal-Weighted Across Country-Years</i>				
Overall	Non-Election Years	Election Years	Regular Elections	Early Elections
6.11%	6.17%	5.97%	5.38%	7.01%
( 0.39% )	( 0.47% )	( 0.71% )	( 0.95% )	( 1.02% )
<i>Sample-Weighted Averages</i>				
Overall	Non-Election Years	Election Years	Regular Elections	Early Elections
4.70%	4.48%	5.51%	4.19%	6.98%
( 0.03% )	( 0.03% )	( 0.06% )	( 0.09% )	( 0.07% )

**Table X**  
**Investment and Cash Holdings: Simultaneous Equations Estimates**

This table reports estimates from the joint estimation of the following system of equations:

$$\begin{aligned}
 I_{jkt} &= \beta_0 + \beta_1 \text{Election Dummy}_{jt} + \beta_2 Q_{jkt,t-1} + \beta_3 CF_{jkt,t-1} + \beta_4 \% \Delta GDP_{j,t,t-1} + \varepsilon_{jkt} \\
 \text{Cash}_{jkt} &= \beta_0 + \beta_1 \text{Election Dummy}_{jt} + \beta_2 Q_{jkt,t-1} + \beta_3 CF_{jkt,t-1} + \beta_4 \text{Size}_{jkt,t-1} + \beta_5 LEV_{jkt,t-1} + \beta_6 I_{jkt} + \beta_7 \sigma(CF)_{kt} + \beta_8 DIV_{jkt} + \alpha_j + \eta_{jkt},
 \end{aligned}$$

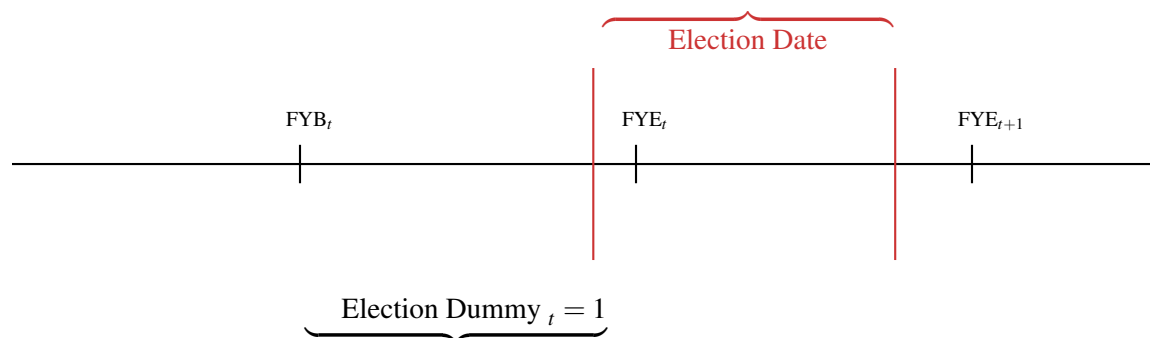
where the right-hand side variables in the investment equation are defined as previously, and the cash regression includes firm size (log of real total assets), leverage (book value of debt scaled by total assets), investment rates, cash flow volatility, dividend, and country fixed effects.  $\sigma(CF)_{kt}$  is the time series standard deviation of 3-digit SIC cash flows calculated over the previous four years,  $DIV_{jkt}$  is a dummy variable set equal to one if the firm pays a dividend in year  $t$  and zero otherwise, and  $\alpha_j$  captures country fixed effects. The estimation procedure is performed by three-stage least squares full-information maximum likelihood estimation.

LHS Variable	Election Year	Q	Cash Flow	GDP Growth	Size	Leverage	Investment	CF Volatility	Dividend	Country Effects
Investment	-0.0062*** (0.0007)	0.0125*** (0.0008)	0.1948*** (0.0021)	0.0550*** (0.0027)						No
Cash Holdings	0.0067*** (0.0014)	0.0902*** (0.0025)	0.1556*** (0.0267)		-0.0055*** (0.0004)	-0.2692*** (0.0072)	0.2733*** (0.1232)	1.314*** (0.0681)	-0.0586*** (0.0014)	Yes
$H_0: \beta_{elect}^{inv} + \beta_{elect}^{cash} = 0$	0.0800									
$\chi^2(1)$	0.7745									
p-value										



**Figure 1.** Matching Election Years with Fiscal Years

This figure demonstrates the construction of the election year dummy for each firm given the firm's fiscal year beginning and end. If the date of the election lies between 45 days prior to the end of the fiscal year  $t$  and 274 after the end of fiscal year  $t$  then the election year dummy variable takes a value of one. All fiscal years for which the election date does not fall within this range have the election dummy set to a value of zero.



## Appendix A: Variable Descriptions

Variable	Description
<i>Worldscope: Firm Characteristics</i>	
Investment	Capital Expenditures divided by the beginning-of-year book value of total assets.
Q	Book value of total assets minus the book value of equity plus the market value of equity scaled by the beginning-of-year book value of total assets.
Industry median Q	World-industry median Tobin's Q, calculated over 3-digit SIC code industries each year.
Cash Flow	EBIT plus depreciation and amortization minus interest expense, taxes and dividends scaled by the beginning-of-year book value of total assets.
Leverage	Total debt (long-term and short-term) scaled by the beginning-of-year book value of total assets
Cash	Cash holdings divided by the beginning-of-year book value of total assets
Size	Natural logarithm of the book value of total assets denominated in US dollars.
Dividend	Dummy variable set equal to one if the firm pays a regular dividend; zero otherwise.
CF Volatility	Time series standard deviation of 3-digit industry cash flows calculated over the previous four years.
Sensitive industry	A dummy variable set to one if the firm belongs to a politically sensitive industry, and zero otherwise.  Our classification of sensitive industry includes agriculture, agricultural services, beer & liquor, Tobacco products, pharmaceuticals, health care services, defence, petroleum and natural gas, telecommunications, and transportation.
Capital intensity	Fixed assets divided by total sales (assets).
Herfindahl index	Sum of squared sales ratio of all firms in the given industry in a given year and country, where the sales ratio is the sales of the firm divided by the sales of all firms in the industry, and industry is defined as 3-digit SIC codes.
Small firm	A dummy variable set to one if the firm size is smaller than the median value in the given year, and zero otherwise.
High export	A dummy set equal to one if export to sales ratio is positive, and zero otherwise.
<i>Election/Country Variables</i>	
Election Dummy	If the date of the election lies between 45 days prior to the end of the fiscal year $t$ and 274 after the end of fiscal year $t$ then the election year dummy variable takes a value of one. All fiscal years for which the election date does not fall within this range have the election dummy set to a value of zero (see figure 1).
Legal Origin	Origin of a country's legal system taken from La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998).
Election type	Type of national elections that determine the head of government directly or indirectly; Presidential; Legislative; Prime Ministerial
Length of term	Length of the term of the government head

Checks	The number of veto players in a political system taken from the World Bank Database of Political Institutions.
Close	An indicator variable set equal to one if the vote difference is less than the first quartile value, and zero otherwise. Vote difference is defined as the difference between the proportion of the votes garnered by the winner and that received by the runner-up.
Regular election	An election is classified as regular if it is held within six months before or after the anticipated election date, which is calculated by adding the nominal term of the chief executive to the previous election date. Otherwise, an election is classified as irregular. An election is also classified as irregular if it is held for the first time.
Right Leaning	A dummy variable set to one if the incumbent government in the year leading up to an election is right leaning, and zero if it is left-leaning or centrist. The World Bank classifies a government as right-leaning if the political party is defined as conservative, Christian democratic, or right-wing. Left-leaning parties are those that are defined as communist, socialist, social democratic, or left-wing. Centrist parties are those that advocate strengthening private enterprise in a social-liberal context.
ICRG Economic Risk	A time-varying measure of country economic risk index taken from International Country Risk Guide (ICRG) produced by Political Risk Services. The index (50 points total) is calculated using the following economic factors with smaller numbers assigned to higher risk: GDP per head, real GDP growth, annual inflation rate, budget balance as a percentage of GDP , and current account as a percentage of GDP.
GDP	Real GDP per capita is obtained from World Bank.

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## Appendix B: Basis of Executive Legitimacy

The data set covers the national elections whose outcomes determine the chief executives of countries directly or indirectly. For each country, following steps are taken to identify the chief executive and to classify the country based on where the executive power is vested (Table II).

1. A country is classified as presidential (parliamentary) if the president (prime minister) is chief of state and head of government. A country is also considered parliamentary if a hereditary monarch is the chief of state while the prime minister is the head of government.
2. For countries with both the prime minister and the president, we refer to Polity IV database from the Center for International Development and Conflict Management at the University of Maryland, The Encyclopedia Britannica, and The World Factbook published by America's Central Intelligence Agency. If these sources describe a country as parliamentary, we classify the country as parliamentary.
3. A country with the prime minister (or premier) is classified as parliamentary if the president is elected by members of the parliament rather than by popular vote.
4. These steps leave six countries unclassified: Finland, France, Poland, Russia, South Korea, and Taiwan. We classify these countries as hybrids as they have elements of both parliamentary and presidential systems. All these countries have prime minister as well as a directly elected president. Both leaders actively participate in the executive decision making, although the relative division of power between the two leaders varies across countries.

We utilize the presidential elections for countries with presidential systems as the outcome of the election directly determines the leader of the nation. In the absence of a direct election for prime minister, the outcome of a legislative election has the foremost influence over the appointment of the prime minister in parliamentary systems as the leader of the majority party or coalition is usually appointed prime minister. Thus, we consider legislative elections for parliamentary countries. An exception is Israel, for which we consider prime ministerial elections rather than general elections. Israel introduced a direct election of prime minister in 1996, separate from the general elections. After three direct elections for the premiership, however, it went back in 2001 to the earlier practice, in which the governing coali-

tion's leader sits as prime minister. We also note that Switzerland deviates from a typical parliamentary system in terms of the leadership. One of the seven members of Federal Council, which is elected by members of parliament, is elected as president for a term of one year. The members of the Federal Council thus serve as president in rotation.

For hybrid systems, we study the constitutional framework and practice of each country to understand how the executive power is divided between the two leaders, and accordingly, select the election identifying the leader who exerts more power over executive decisions (see Table II for the choice of elections). This task of classification is somewhat complicated for countries in which the executive power of the two leaders is well balanced. In France, for example, the president controls foreign relations and national defense while the premier handles domestic policy. Despite such division of responsibilities, however, the president wields formidable executive powers including the power to dissolve the national legislature and call national referenda. For some countries, however, the selection process is rather straightforward. The South Korean system, for instance, is akin to a pure presidential system despite the existence of a prime minister. Its legislative elections do not serve as an indirect election of prime minister as the prime minister is not required to be a member of parliament as in typical parliamentary systems, in which the prime minister arises from among the ranks of the parliament's membership. Therefore, presidential elections are in effect the most influential national elections in South Korea. Based on our examination, presidential elections are chosen for France, Russia, South Korea, and Taiwan while legislative elections are utilized for Finland and Poland. One may disagree with our choice of elections for France, Poland, Finland, and Pakistan, where the executive power of the two leaders is relatively well balanced (France, Poland, and Finland) or has shifted over time (Pakistan). As a robustness check, we repeat the test excluding these four countries to ensure that the test results are not driven by our choice of the elections (untabulated) and find that the results remain intact.