Political Uncertainty and Corporate Investment Cycles

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ABSTRACT

We document cycles in firm-level corporate investment corresponding with the timing of national elections across a sample of 48 countries between 1980 and 2005. During the year leading up to the election outcome, firms reduce investment expenditures by an average of 4.8% relative to non-election years, controlling for growth opportunities and economic conditions. We investigate several potential explanations and find evidence consistent with the hypothesis that electoral uncertainty leads firms to temporarily reduce investment expenditures prior to the election outcome. In particular, we find that the reduction in investment is larger around elections with less predictable outcomes. We also find that the investment cycles are more pronounced in countries with less stable political systems and with fewer checks and balances in place at election time. Decreases in corporate investment correspond with temporary increases in corporate cash holdings. Overall, these findings suggest that political uncertainty is an important channel through which the political process affects real economic outcomes.

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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. 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 uncertainties associated with possible changes in national leadership have implications for the behavior of both politicians and firms.

One particularly important way in which politics is hypothesized to influence real decisions is through the channel of uncertainty and instability. The effects of policy uncertainty are especially relevant in light of the recent financial crisis and subsequent recession. There is a great deal of uncertainty as to how governments will shape policy to stimulate investment in the short run and formulate regulatory and economic policy in the long run. It has be argued that this uncertainty itself may be hindering a recovery by inducing firms to delay investment until the uncertainty related to future financial regulation and macroeconomic policy is resolved.[1] An empirical investigation of the impact of this type of uncertainty on investment, however, is a challenging task due to the potential endogeneity between policy uncertainty and economic growth as the economic downturn itself has probably generated a great deal of political uncertainty.

In this paper, we examine the investment behavior of firms around national elections. Elections in which the national leader is determined provide an interesting setting to study the effects of political uncertainty on investment for two important reasons. First, election outcomes are relevant for corporate decisions as they have implications for industry regulation, monetary and trade policy, taxation, and, in more extreme cases, possible expropriation or nationalization of private firms. Second, elections around the world provide a natural experiment framework for studying political influences in corporate

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[1]The chief economist of the International Monetary Fund, Olivier Blanchard, recently expressed this concern in an article written for the January 29, 2009 edition of *The Economist* and suggested that policies should be aimed at reducing uncertainty.

investment, allowing us disentangle some of the endogeneity between economic growth and political uncertainty. Assuming political uncertainty is higher around time periods in which change in national leadership is more probable, elections provide a recurring event that helps isolate the impact of policy uncertainty on investment from other confounding factors. The timing of elections is out of the control of any individual firm and even fixed in time by constitutional rules for a large proportion 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. Using national elections in 48 countries between 1980 and 2005, we examine changes in corporate investment as political uncertainty fluctuates by comparing corporate behavior in the year leading up to national election outcomes with that in non-election years.

The intuition underlying the relationship between electoral uncertainty and investment is simple: if an election creates the potential for a bad outcome from a firm's perspective, the option value of waiting to invest increases and the firm may rationally delay investment until some or all of the policy uncertainty is resolved. This relationship has been modeled by Bernanke (1983) and Bloom, Bond and Van Reenen (2007). In these models, firms become cautious and hold back on investment in the face of uncertainty. Others have modeled the effects of political uncertainty in a macroeconomic context. Rodrik (1991) and Pindyck and Solimano (1993) are prominent examples of this literature in which the uncertainty brought about by political factors 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, some 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, as discussed in Pindyck and Solimano (1993), models of investment under uncertainty are less clear about how uncertainty affects long-run equilibrium ratios of investment to capital stock as uncertainty affects capital stock as well in the long run. The predictions of the models are less ambiguous when there are temporary shocks to the level of uncertainty. Indeed, Bernanke (1983) suggests that events

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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 surrounding national elections can induce immediate declines in investment expenditures.

Our empirical investigation provides results consistent with the political uncertainty hypothesis. We document novel and robust evidence that political uncertainty around national elections induces cycles in corporate investment. In the period leading up to the election, investment expenditures decline by an average of 4.8%, controlling for growth opportunities, cash flows, and economic growth. To address the concern that the results may be driven by elections that are not fixed in time by constitution, we repeat the analysis by estimating our investment regressions for only countries with fixed election timing and find similar results. Additionally, we examine the determinants of early elections and find a strong positive correlation between economic growth and the probability of holding an early election. To the extent that a firm's investment expenditures are positively correlated with economic growth, this suggests that the inclusion of endogenously timed elections in the regressions has the net effect of reducing the dampening effect of electoral uncertainty on investment because they are generally called during periods of economic expansion. That is, the inclusion of endogenously timed elections leads to, if anything, a slight bias against our findings.

Across countries, we document that the temporary decline in investment expenditures is larger in countries with civil law origins, fewer checks and balances, less stable governments, and bigger government spending relative the GDP. Within countries, we find that the cycles are more pronounced for firms in politically sensitive industries. We 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. We also find that investment drops more in election years in which the incumbent national leader is classified as "market friendly" by the World Bank. We also document that investment reduction in the years preceding elections is followed by higher than average investment following elections as the uncertainty over election outcomes subside, although the magnitude of such pickup does not compare to that of the earlier drop. We also measure changes in cash holdings, finding 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 held as cash until the election uncertainty is resolved.

Political uncertainty is not the only mechanism whereby real outcomes can be affected around the timing of elections. There are two plausible alternative explanations in the literature for election cycles in investment. First is the political business cycles hypothesis. Starting with Nordhaus's (1975) model of political business cycles, there has been debate over whether incumbents manipulate fiscal and monetary policy instruments to influence the level of economic activity prior to an election in order to maximize the probability of reelection. Thus, one alternative explanation for our results is that corporate investment is reacting to changing macroeconomic fundamentals. The second is related to the value of political connections. Some firms may have incentives to change their investment behavior to help ensure their political connections remain in place through the election cycle. Consistent with this, Bertrand, Kramarz, Schoar and Thesmar (2006) investigate the behavior of politically connected CEOs around municipal elections in France. They find that firms managed by connected CEOs boost their investment during election years, particularly in politically contested areas, likely in an attempt to help their connection get re-elected. We conduct formal tests of these alternative hypotheses and find no evidence that they are operating in our sample of firms. We therefore view the political uncertainty hypothesis to be the explanation among existing theory that fits best the patterns in the data.

We view these findings as having two important contributions. First, these results demonstrate a link between the political process and real outcomes. The reults suggest that political uncertainty matters for a firm's real investment and savings decisions. Second, this study provides evidence that uncertainty in general is an important determinant of investment dynamics. As far as we know, we are the first to examine political uncertainty around national elections and its impact on investment at the firm level.

The remainder of the paper proceeds as follows. Section II develops the empirical predictions and discusses the identification strategy. Section III summarizes the firm characteristics and election data. Section IV presents our main empirical results related to corporate investment cycles around elections, including various subsample analyses, multiple robustness checks, and an examination of changes in corporate cash holdings around the election period. Section V concludes.

II. Related Literature and Hypothesis Development

Theories 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 the amount of 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 additional information gained by delaying project implementation. The literature on investment and uncertainty 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 some degree of irreversibility and uncertainty over future cash flows or discount rates, the value of the investment project will be affected by the same factors that influence the pricing of financial options, in 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), who examine the valuation of operating options and the value of waiting to invest. They demonstrate that even a moderate amount 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) demonstrate 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.

In macroeconomic research, *policy* related uncertainty and its impact on investment have a long history. 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 deepened the great depression as firms held off on investment projects until the uncertainty began to dissipate.

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. More recently, Bloom, Flotoetto and Jaimovich (2008) model business cycles as a function of variation in levels of macroeconomic uncertainty.

Uncertainty increases the value of waiting to invest through what Bernanke (1983) termed 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 delay investment in an anticipation of negative changes in the country's macroeconomic policy, taxation, monetary policy, or the general regulatory environment. However, 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 realization of 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 $R_{i,t}$. Consider an election that increases the absolute return of each of the k possible investment projects such that $R_{i,t+1} \geq R_{i,t}$, regardless of the outcome. The firm still has an incentive to delay investment 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.

If political uncertainty matters for firms, then the recurring 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 hold off on its investment projects. This leads to our primary hypothesis that investment expenditures are expected to decline in the year leading up to the election. 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 impact of electoral uncertainty is 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, the magnitude of the investment cycle may vary across elections, depending on the the degree of uncertainty or spread of potential outcomes. 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 likelihood and spread of possible outcomes will generate heterogeneity in the size of observed investment cycles. Across countries, we hypothesize that 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. For example, a bigger government may be capable of larger policy swings, generating more uncertainty surrounding elections. The political system may matter as well. Presidential systems are typically considered to have greater checks and balances but less flexibility in policy making relative to Parliamentary systems, which typically observe simultaneous changes in control at both the executive and legislative branches of government.[2] 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. We also expect that countries with less stable governments in general will generate larger effects around elections.

Within countries, we hypothesize that the drop in investment expenditures will be larger when the election 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 regarding the impending election outcome is unobservable, but we do observe the election results and vote counts for each candidate. We proxy for the degree of outcome uncertainty in any given election by using the size of the margin of victory and examine whether investment cycles vary across elections within countries according to this measure. We also investigate the political platform of the incumbent leader during an election year, as classified by the World Bank as either market-friendly or not. The political platform of an incumbent has asymmetric implications on investment cycles. Firms are likely to view a possible shift in leadership from a market-friendly leader to a socialist leader as worse news than a possible shift in the other direction.

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[2]See Stepan and Skach (2003) for a general discussion of the trade-off between presidential and parliamentary systems.

III. Data Description

A. Election Data

This study considers 248 national elections in 48 countries held between 1980 and 2005 of which the outcome determined the national leader directly or indirectly. Detailed election information is obtained from a variety of sources. A major source for election and 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 and classification of political platforms for the elected leaders and candidates. We supplement the election data with various internet sources[3] for cases in which the election information is missing from the Polity IV database or the Database of Political Institutions.

The first task for the election data collection is to identity 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, 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 such legislative election has the foremost influence over the appointment of prime minister.[4] Some countries use a hybrid system combining elements of both parliamentary and presidential democracy; a president and a prime minister coexist with both presidential and legislative elections held nationally. In such cases, the constitutional framework and practice is examined in greater detail to understand how executive power is divided between the two leaders, and the election associated with the leader who exerts more power over executive decisions is

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[3]The internet sources include http://www.cidcm.umd.edu/polity/data/, http://www.binghamton.edu/cdp/era/searchera.html, and http://www.electionresources.org/.

[4]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.

selected for the study. Appendix B describes in detail the process of classifying systems and selecting election types. As a robustness check, we repeat our analysis excluding the four countries for which the classification requires some discretion and find that the results are similar.

The resulting data set comprises thirty one countries with legislative elections, sixteen with presidential elections, and one country (Israel) with prime ministerial elections.[5] Table I presents the classification of political systems and the number of elections utilized for each of the 48 countries in our sample. The table also shows the origin of each country's legal system, as reported by 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.

Another important characteristic of national elections is whether the timing of the elections is exogenously specified by electoral law. Governments under some electoral systems 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. This complicates the interpretation of our empirical results as the timing of elections may be endogenously connected to the country's economic performance over time. For example, 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. To deal with the possible endogeneity of election timing, we classify countries as having exogenous timing or endogenous timing. All countries with a record of early elections are classified as having endogenous timing. All presidential elections, with the exception of Sri Lanka, are held on a regular basis and are classified as having exogenous timing. This leaves unclassified seven countries with parliamentary systems and one country with hybrid system. In order to classify those remaining countries, we refer to electoral law, election timing in the past, and customary traditions, as well as the classification provided by Alesina, Cohen and Roubini (1992)[6]. Accordingly, among the remaining countries, three countries, Czech Republic, Finland, and New Zealand, are classified as having endogenous timing[7] and the rest

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[5]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 leader of a governing coalition sits as prime minister.

[6]Alesina, Cohen and Roubini (1992) classify the timing of elections in 18 developed countries.

[7]We note that Czech Republic does technically allow early elections, but strict rules make it difficult to call an election early. In fact, the major political parties in Czech Republic attempted to call an election early in 2009, but the Constitutional Court ruled it illegal.

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are classified as having exogenous timing. Table I reports the election timing classification for every country in our sample.

Panel A of Table II summarizes 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, taken from the World Bank Database of Political Institutions. The World Bank refers to various sources including Political Handbook yearbooks in order to identify party orientation with respect to economic policy.[8] A government is classified as being right-leaning if the political party is defined as conservative, Christian democratic, or right-wing by the sources. 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 are right-leaning, 36.7% left-leaning, and 20.2% centrist. We also summarize the distribution of historical vote counts to give a sense for the degree of uncertainty surrounding a given election. On average, the winner of an election garners 41.9% of the total vote, followed by the runner-up at 28.7%, and the third-place candidate receives 12.2% of the total. Of all elections in our sample, 45.6% are classified as having exogenous timing. 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.

B. Country-Level Data

We obtain institutional and macroeconomic data from various sources. The World Development Indicators from the World Bank is our primary source for the macroeconomic variables including real GDP, central government spending, inflation, and real interest rate. We obtain data on the money supply (M1) from Political Risk Service's International Country Risk Guide (ICRG). ICRG also provides the government stability ratings for the countries in our sample. The government stability index assigns numbers between 0 and 12, where higher values indicate more stable governments. This time-varying index assesses the government's ability to carry out its declared programs, and its ability to stay in office.

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[8]See Keefer (2007) for the full list of sources utilized for the identification as well as a detailed description of how the political platform variable was constructed.

The Database of Political Institutions provides various measures of the effectiveness of checks and balances in each political system on an annual basis[9]. 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 the prevailing electoral rules and laws. It also takes into account whether the executive and legislative branches of government are controlled by the same party, which effectively reduces 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 II shows that the average of checks in the sample is 3.95 with the standard deviation of 1.95.

The index of central bank independence (CBI) measures the extent to which the central bank is independent from the political power. This annual, time-varying index is taken from Cukierman, Webb, and Neypati (1992) for the period between 1980 and 1989, and from Polillo and Guillen (2005) for the period between 1990 and 2000. Initially, Cukierman et al.(1992) constructed the index for 72 industrial and developing countries for the period between 1950 and 1989.[10] Subsequently, Polillo and Guillen extended the index to the period between 1990 and 2000 according to Cukierman et al.(1992)'s definition. The index is a continuous score ranging between zero and one, where one indicates maximum independence. It is obtained by aggregating 16 characteristics of central bank charters describing four aspects: procedures concerning the governor of the central bank (appointment, dismissal, and legal term of office); relationship between the government and the bank, and the location of authority over monetary policies; objectives of the central bank; and relationship between the government and the bank in terms of borrowing.

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[9]For further detail on the construction of the checks and balances index, see Beck, Clarke, Groff, Keefer and Walsh (2004) and Keefer (2007).

[10]While Polillo and Guillen (2005) report the index on an annual basis, Cukierman et al.(1992) report on a decade basis given that there is little change in the index during their sample period. Polillo and Guillen also note that the bulk of the global spread of central bank independence occurred after 1989. Given the time-invariant tendency of the index during the 1980s and the lack of more detailed data, Cukierman et al.(1992)'s index figures are treated as annual values for our analysis for the period between 1980 and 1989.

C. Firm-Level Data

We obtain firm characteristics data from Thomson Financial's Worldscope database between 1980 and 2005 for the countries in our sample. 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. The firm-level information is matched with the election and country data for the analysis. Table I reports the total number of firm-year observations by country. Panel B of Table II provides summary statistics for the firms in our sample excluding those with missing information. Appendix A provides a comprehensive description of variable definitions and data sources.

IV. Empirical Results

This section presents our empirical findings related to changes in corporate investment around election cycles. We begin with the discussion of the univariate results, followed by the examination in the multivariate framework controlling for economic conditions and firm characteristics. We then exploit variations in sensitivity of investment to political uncertainty across countries, elections, and firms. We also address alternative explanations and possible concerns relating to our empirical analysis. Finally, we examine changes in corporate cash holdings in election years.

A. Corporate Investment around National Elections

Panel C of Table II summarizes mean investment rates around elections. In non-election years, the unconditional average investment rate, measured by ratio of capital expenditures to beginning-of-year total assets, is 0.0795. The rate drops by 0.0068 to 0.0727 in election years. This reduction, statistically significant at the 1% level, represents a 8.5% drop in the unconditional mean investment rate relative to non-election years in the overall sample of firms. This univariate analysis, while not controlling for firm and country characteristics, provides preliminary evidence supporting the view that electoral uncertainty leads to a temporary drop in corporate investment.

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 standard investment-Q specification to evaluate changes in corporate investment in election years that cannot be explained by the standard explanatory variables:

$$I_{ijt} = \beta_i + \beta_1 \text{Election Dummy}_{jt} + \beta_2 Q_{i,t-1} + \beta_3 CF_{ij,t-1} + \beta_4 \% \Delta GDP_{j,t-1} + \gamma_t + \varepsilon_{ijt}, \qquad (1)$$

where i indexes the firm, j indexes the country, and t is a time index. The dependent variable, investment, is defined as capital expenditures scaled by beginning-of-year book value of total assets. The firm characteristics variables, Q and cash flow, are measured at the beginning of the year for each firm. Firm and year fixed effects are also included in the specification. Standard errors are clustered by country throughout the analysis.

The explanatory variable of interest is the election dummy, which takes a value of one in the year leading up to an election outcome. To best capture the effect of uncertainty on investment, the dummy was given a value of one for any firm-year in which an election is held no earlier than 60 days prior to the fiscal year end in year t and no more than 274 days after fiscal year end of year t.[11] Figure 1 illustrates the procedure we use to classify election years. The coefficient of the election dummy, β_1, is thus designed to capture changes in the conditional investment rate in the period leading up to national elections, controlling for firm investment opportunities 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. We employ a measure of Tobin's Q, the ratio of the market value of assets to the book value of assets, as our proxy for the incentive to invest. Cash flow is defined as earnings before interest and taxes minus taxes and interest expense plus depreciation and amortization. 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 a nation's real gross domestic product in the year prior to the investment decision. We winsorize the firm characteristics at the 1st and 99th percentiles throughout the analysis. We employ the investment-Q framework as the baseline specification, because it has a solid theoretical foundation as well as good empirical support

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[11] The results are robust to various cutoff points for the election dummy definition.

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. This specification has been employed in various empirical settings, including financial frictions (Hennessy, Levy and Whited (2007)), corporate divestitures and spinoffs (Colak and Whited (2007)), and internal capital markets (Scharfstein and Ozbas (2008)), for example. As discussed in the robustness section, the main results are robust to various alternative specifications as well as different measures of corporate investment and proxies for the incentive to invest.

Table III reports the results for our baseline specification. The first column reports the regression of investment on the election dummy alone. The following columns add firm and year fixed effects, Q, cash flow, and GDP growth. Across all specifications in Table III, we find that investment is positively 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 β_1, the coefficient on the election dummy, is economically meaningful and statistically significant. Decreases in conditional investment rates range between 0.0036 and 0.0067 depending on the specification. The estimates reported in column 5, which represent the full baseline specification throughout the rest of the analysis, shows that investment rates decline by 0.0038 on average in the year leading up to the election, after controlling for growth opportunities and economic conditions. This translates to an economically significant 4.8% reduction in investment rates relative to the average non-election year investment rate across all countries. The final column includes continent-by-year dummy variables to account for potential regional shocks to investment. The results are robust to the inclusion of these effects. The results from the baseline specification are consistent with the hypothesis that the uncertainty associated with national elections around the world increases the returns for waiting to invest, leading firms to lower investment rates.

B. Subsample Analysis

Having documented that investment is systematically lower in the period leading up to a national election in the overall sample, we now deepen the analysis by utilizing variation in the degree of uncertainty across countries and time. The impact of electoral uncertainty should depend on the spread across pos-

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sible outcomes and the probability that a policy shift or a bad outcome will occur. Therefore, we expect to observe variation in the magnitude of changes in investment rates accordingly.

B.1. Variation Across Countries

In order to incorporate differences in political institutions and government stability across countries, we split up countries by legal origin, political system, degree of checks and balances, a measure of government stability, and the size of the central government relative to that of the country's economy. In the first cut, we examine differential effects of elections on investment rates by legal origin. Law and finance research documents that a legal origin affects the way firms operate through the legal rules and law enforcement (La Porta et al. (1997, 1998, 1999)). Especially, given that common law countries are generally 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. Hence, we expect that investment cycles will be more pronounced in civil law countries to the extent that political uncertainty is driving the investment cycles.

In the second cut, we compare elections in countries with presidential systems with 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 thought to be characterized by a high degree of checks and balances which tends to minimize policy swings and acts as a constraint in passing new laws and regulations. Parliamentary systems, on the other hand, are characterized by simultaneous 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, tabulated by the World Bank, 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 stronger checks

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and balances to be less sensitive to the electoral cycles since the turnover in power through elections are likely to have less of an impact on actual policy.

Countries with more stable governments are likely to be less vulnerable to election outcomes, resulting in smaller changes in investment rates during election years compared with less stable countries. We obtain government stability measures over our sample period from Political Risk Services' *International Country Risk Guide* (ICRG). The stability ratings are based on an integer point scale, with larger numbers indicating more stability. An additional feature of the ICRG ratings is that there is some time-series variation in the ratings as they are reported on a monthly basis. To match the ratings with each firm-year observation, we average the monthly ratings over each firm's matching fiscal year.

Finally, we explore variation in the size of the central government relative to that of the overall economy as measured by the ratio of government spending to GDP. This is important for two reasons. First, our sample includes only national elections. We do not study the effects of local elections on firm investment in this paper. As such, it is important to demonstrate that national elections are indeed more important in countries in which the central government policy plays a larger role in the economy. Second, there is much more at stake during elections in countries where the government makes up a large portion of gross domestic product.

Table IV reports the estimation results for the following general specification:

$$I_{ijt} = \beta_i + \beta_1 \text{Election}_{jt} + \beta_2 \text{Election}_{jt} \times X_{jt} + \beta_3 X_{jt} + \beta_4 Q_{i,t-1} + \beta_5 CF_{i,t-1} + \beta_6 \% \Delta GDP_{j,t-1} + \gamma_t + \varepsilon_{ijt},$$

where X_{jt} is the country-specific characteristic of interest. We include both the levels of the country characteristic as well as an interaction term with the election dummy variable. The interaction term picks up the difference in the election cycle among different levels of the X variable. The country characteristic variable is interacted with all the other independent variables in the baseline specification to allow for differences across countries with regard to the chosen country characteristics.

Table IV reports the results from the cross-country regressions. Some very interesting results emerge. The first column of the table reports the regression with an interaction term for the legal origin of the country. The common law indicator variable is set to one for countries with English origin

and zero for countries with French, German, or Scandinavian origin. The interaction between common law dummy and election dummy has a positive and significant coefficient, indicating that the countries with common law origins demonstrate less of an electoral effect on corporate investment in election years. 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.

The second column of the table reports results comparing the effects of different political systems. The presidential dummy is set to one for countries with a presidential system and zero for those with parliamentary systems. The coefficient of the interaction term, $Presidential \times Election$, is positive, but statistically insignificant. Thus, the evidence suggests that on average, there is no significant difference between presidential and parliamentary elections in terms of election cycles in investment. It appears that other country characteristics matter more than the simple classification based on the election type.

One critical disadvantage with the common law and presidential indicator variables is that they do not vary over time. In the remaining three specifications, we employ time-varying country characteristics that are hypothesized to be important for corporate decision making during an election year. The third column shows that the interaction between the checks variable and the election dummy has a positive and significant coefficient, indicating that countries with stronger checks and balances exhibit less pronounced investment cycles, as predicted. It is interesting to note that the mean number of checks in presidential systems is 4.28 and that of parliamentary systems is 4.06 in our sample. These numbers are statistically indistinguishable. This suggests that the number of veto players matter more than the simple classification based on the election type.

The fourth column of Table IV presents the estimation results when we interact the ICRG government stability rating with the election dummy. The interaction term is positive and significant, suggesting that elections lead to larger reductions in corporate investment when government is relatively less stable. The final column reports the results of the specification in which the election dummy is interacted with the ratio of central government spending to GDP for each country. Since the elections in our sample are all at the national level, it is likely that there is more at stake in countries in which the central government plays a larger role in the overall economy. The results in column 5 support

this intuition. The reduction in corporate investment around elections is much larger in countries with larger central governments.

B.2. Election Timing

Up to this point, we haven't differentiated between countries in which the timing of an election is fixed by electoral laws and those in which the incumbent government has an option to call an election before the scheduled election date. The potential endogeneity of election timing can impose a significant bias on our results. The literature is mixed as to whether a favorable economic condition increases the likelihood of early elections. Ito (1990) finds that Japanese elections tend to be called early during good times whereas Alesina, Cohen, and Roubini (1993), examining 14 OECD countries with flexible election timing, do not find the supporting evidence except for Japan. For our sample, we do find some evidence that governments opportunistically time elections if they have the option to do so. We examine GDP growth around elections to compare the economic conditions around regularly scheduled elections against those around early elections.

Table V reports annual GDP growth rate for our sample. Two types of summary statistics are calculated. 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 the sample-weighted average GDP growth was 4.70% over our sample period. 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%, suggesting that elections coincide with good economic times. Since investment rates and GDP growth are positively correlated, it is likely that the bias due to the endogeneity of election timing works against the hypothesis of investment cycles around elections. However, in order to ensure that the results are not contaminated in any way by this potential bias, we sort countries into two groups, one with the fixed election timing and the other with an option to call an election early.

Table VI reports the estimation results for the two subsamples of countries. Specification (1) reports the results of the baseline investment regression only for the countries with exogenous election timing.

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Specification (3) reports the results for the countries with the option to call early elections. In both cases, the coefficients on the election dummy are significant and of similar magnitude as that of the overall sample. Thus, the results are unlikely to be driven by the endogeneity of election timing.

B.3. Predictability of Election Outcomes

We now examine whether the impact of political uncertainty varies across elections within a country. If the outcome of an election is anticipated well in advance, there should be very little uncertainty associated with the 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 good polling data are not available for all of the countries in the sample, we can observe the actual vote counts from the elections 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 of victory distribution over the sample of countries under consideration, where the margin of victory is defined as the difference between the fraction of votes won by the victor and that garnered by the runner-up. We define close election dummy separately for the subsample of countries with fixed election timing and for the subsample with flexible timing.

Table VI reports the results of the investment regression with an interaction term between the election dummy and our ex post measure of election closeness. We conduct separate tests for countries with fixed election timing and for those with endogenous election timing. Specification (2) reports the results for the sample of countries with exogenous election timing. The interaction term is large, negative, and statistically significant. The coefficient suggests that average investment rates drop by almost 11% in hotly contested elections. It is interesting to note that the coefficient on the election dummy is no longer statistically significant. This suggests that the corporate elections cycles documented in this paper are driven by the more uncertain elections. Specification (4) reports the results for the countries with endogenous timing of elections. The interaction term is not significant, suggesting there is no difference between close elections and elections with wide margins of victory in these countries. To investigate this rather puzzling finding, we compute, for each country, the margin of victory at the 25th

percentile of the margin distribution for each country. For countries with exogenous timing, the 25th percentile value of the margin of victory distribution is 2.5%, compared to 10.66% for countries with endogenous timing. Thus, in our sample, elections tend to be much closer in countries in which there is no discretion over election timing. This is further evidence that incumbent governments time elections to maximize their chances of re-election. This is also a reason why the interaction term in column 4 is not significant for this set of countries.

B.4. Investment Rates after the Election

Our primary focus to this point has been on whether firms reduce investment in the year leading up to an election outcome. A natural question that follows is whether investment rise to a level higher than normal once the election uncertainty is resolved. To address this question, we construct a post-election dummy variable similar to that of the election dummy, except now it takes a value of one in the year after the election if at least 80% of the fiscal year days lie after the election date. We then include this dummy variable in our investment specification to get an idea of the dynamics of investment around the full election cycle. We also interact this dummy with the close election indicator defined in the previous subsection.

We report the estimation results in Table VII. We estimate this specification on the full sample, the exogenous timing subsample, and the endogenous timing subsample. The coefficient of the post-election dummy is positive in all specifications, but it is not statistically significant. The one notable exception to this pattern is reported in column (3), in which we have interacted the post-election dummy with the close election dummy for countries with fixed election timing. The result in column (3) shows that, for close elections, not only the pre-electoral reduction in investment is larger, but also the post-electoral investment increases to a level significantly higher than that in non-election years. The magnitude of investment reduction in the election years is similar to that reported in the second column of Table VI. Figure 2 illustrates the cycles implied by the estimates in column (3). The solid line shows the changes in investment around the tighter elections, while the dashed line illustrates the changes in investment when the election outcome is easier to predict. As suggested by Table VII, the cycles are more pronounced for close elections. It is also interesting to note the asymmetry in the

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coefficient estimates for the pre-election period versus the post-election period. The average reduction in investment before elections is just more than twice as large in absolute terms as the post-election spike in investment rates.

C. Robustness

In this section, we perform several robustness checks. We start by examining variation across firms within each country. Firms are likely to differ from each other with respect to their sensitivity to election outcomes. While it is difficult to classify industries as being politically sensitive or not, we take some guidance from the political economy literature to classify industries according to whether they have high or low sensitivity to election outcomes. Based on the findings and references of Herron, Lavin, Cram and Silver (1999), we classify firms in tobacco products, pharmaceuticals, health care services, defense, petroleum and natural gas, telecommunications and transportation industries as being politically sensitive. We set a sensitive industry dummy to one if a firm belongs to one of these politically sensitive industries. The first column of Table VIII reports the estimates from the inclusion of this interaction. The coefficient on the politically sensitive dummy is negative as predicted, but only marginally significant.

Secondly, we investigate whether the political platform of the incumbent government affects the investment sensitivity to the electoral uncertainty. If the incumbent government is market friendly, then the election outcome might be viewed from the firm's perspective as either neutral (the incumbent wins) or negative (the 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 (the incumbent wins) or positive (the incumbent loses). In such a setting, the bad news principle works in the former case more strongly than in the latter. In order to test this hypothesis, we adopt the classification of political platform provided by the World Bank Database of Political Institutions. The market friendly incumbent dummy equals one if the incumbent government in the election year is classified as right-leaning or centrist by the World Bank, and zero otherwise.[12] To the extent that right-leaning or centrist incumbents are more market friendly, we expect deeper investment cycles when right-leaning or centrist

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[12]See appendix for detailed description on the World Bank classification of political platform.

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governments are in power. The second column of the table indicates that the interaction between the market-friendly dummy and the election dummy is negative and significant, consistent with our prediction that investment cycles would be deeper when a market friendly government is in power in the election year. It appears that firms view a transition from right to left as having more potentially bad news than a possible left-to-right transition of power. However, we interpret this result with caution as it relies on the classification of political platform being highly correlated with the actual market-friendliness of economic policies.

In the third column, we estimate the regressions omitting the nine Asian and Latin American countries involved in the financial crises in the 1990s. Mei and Guo (2004) noted that eight out of nine of these countries held elections during the financial crises.[13] As such, there is some concern that the financial crisis itself could be generating the results. After eliminating those crisis countries, the results remain intact. The fourth column reports the results when we include the lagged dependent variable on the right hand side of the regression equation. Eberly, Rebelo and Vincent (2008) document that lagged investment have been found to be correlated with contemporary investment in many data samples. There may be some concern that autocorrelation in capital expenditures may contribute to the political cycles documented in this paper. We find that the main finding is robust to the inclusion of lagged investment rates.

In column 5 of Table VIII, we perform a random placebo test to address the concern that there may be some non-linear time trend in our data or that there is nothing unusual about the election dates. For each country, we randomly select a starting date within the first 5 years of the sample that is not already an election year. This randomly selected date becomes the new election date, and we construct the remaining election dates based on the average periodicity of elections within each country. The election dummy is constructed as before, but with reference to this randomly selected date. The coefficient on this random dummy variable is close to zero and insignificant.

Finally, we address the concern that the results may be driven by the countries with a disproportionate representation in our sample. Indeed, the United States, United Kingdom, and Japan together make up about 45% of the total sample. We deal with this concern in two different ways. First, we re-estimate

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[13]The nine countries include Argentina, Indonesia, Malaysia, Mexico, Philippines, South Korea, Thailand, Turkey, and Venezuela

the investment specification after omitting these three countries from the sample. Column (6) of Table VIII reports that the results remain unchanged. Second, we place equal weight on each country in our sample by estimating the investment regression on a country-by-country basis and then averaging the coefficient across all 48 countries. Column (7) reports the results. The coefficient obtained from the equal-weighting procedure is actually larger in magnitude than that of the baseline results.

In results not reported here[14], we also estimated the regression equation using subsamples of 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. We also consider the possibility that mis-measurement in our proxy for Tobin's Q bias the sign of the coefficient on the election dummy. We employ the proxy-quality threshold test of Erickson and Whited (2005) to determine if measurement error is affecting the sign of our coefficients. The test[15] indicates that there is probably no bias induced by our proxy for Tobin's Q in our election dummy coefficients.

D. Alternative Explanations

In this section, we investigate other potential channels through which an election may lead to measurable changes in economic activity. First, elections may create incentives for incumbent politicians to change their behavior during election years. The political business cycle literature deals with the opportunistic behavior of incumbent politicians as well as the partisan behavior driven by the preference for a certain set of economic goals. 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 that the incumbent chooses policies to manipulate the short-run tradeoff between unemployment and inflation to induce higher growth prior to an election. Hibbs (1977) offered a different perspective on political business cycles, where changes in economic activity around the regime change arise from partisan differences in policy

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[14]Available upon request.
[15]Results available upon request

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preferences, such as the pursuit of low unemployment at the expense of high inflation or vice versa. 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[16], there is no significant pre-electoral increase in economic activity in the United States or any of the OECD countries (Drazen (2000))[17]. There is also little evidence that policy makers manipulate fiscal and monetary instruments to affect economic outcomes in election years. However, there is some evidence suggesting that governments take action in other ways to improve their chances of staying in power. Dinc (2005) and Cole (2007) investigate the lending patterns of government-owned banks in several emerging markets and India in election years. Interestingly, they both find that lending by government-owned banks increases significantly in election years relative to that by private banks, particularly in hotly contested regions. We note that the political business cycles hypothesis predicts a positive relationship between investment and election timing, while political uncertainty and instability is hypothesized to have a negative effect on firm investment during election periods. Thus, the political business cycles should have the net effect, if any, of reducing the negative effects of uncertainty on investment. Still, we conduct various tests on political business cycles below.

A second channel addresses how elections may affect the incentives of politically connected firms. In particular, firms may 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[18] that 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 in times of distress. As such, connected firms have an incentive to aid incumbents to ensure that 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 municipal elections in France. They find that firms

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[16]Fair (1996) shows that economic conditions are good predictors of election outcomes in the United States.

[17]Drazen (2000) provides comprehensive reviews on the empirical evidence related to political business cycles.

[18]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.

managed by connected CEOs boost their investment during election years, particularly in politically contested areas, likely in an attempt to help their connection get re-elected.

While the political connection hypothesis predicts increased investment for connected firms in election years, its impact on average investment over all firms is unlikely to be substantial as politically connected firms represent a relatively small fraction of the population of firms (three percent of firms according to Faccio (2006)). Nonetheless, we re-run the investment regressions excluding the connected firms identified by Faccio (2006) to separate the effect of political connection. The first column of Table IX reports the results. The coefficient is still negative and of similar magnitude after dropping these firms.

Next, we investigate the channel of political business cycles in various ways. First, we sort our sample according to the degree of central bank independence to investigate whether the possible manipulation of monetary policy instruments are crowding out private investment. The measures of central bank independence are based on Cukierman, Webb, and Neypati (1992). Political incumbents in countries with independent central banks are unlikely to be able to manipulate monetary instruments before the election to spur economic activity. The second column of Table IX considers only the countries with a high degree of central bank independence and confirms that the result is present. In the next column, we investigate whether the opportunistic behavior of the incumbent before the election is driving our results by considering only the elections in which the incumbent is not running for re-election. In such cases, the incumbent leader does not have a strong incentive to manipulate economic policy. We redefine the election year dummy such that it is set to one only if the incumbent leader is not running for re-election. Column 3 shows that the main results still hold for these elections, suggesting that the manipulation of fiscal or monetary policy is not driving the result.

In the next set of tests, we examine further into the opportunistic political business cycle hypothesis. As mentioned above, there is a long literature investigating whether incumbent politicians try to stimulate economic growth in various ways in the period leading up to the election to improve their chances of re-election. Although this behavior would tend to stimulate economic growth in the aggregate, it could be the case that the government actions may crowd out private investment. This could explain the reduction in corporate investment rates leading up to the election that we have documented

in this paper. Given this possibility, we now examine various policy instruments around the world and test whether there are systematic changes in these macroeconomic variables around elections.

To test for political business cycles, we adopt the approach of Alesina, Roubini and Cohen (1999) and estimate the following specification for the panel of countries in our sample:

$$z_{it} = \alpha_0 + \alpha_1 z_{i,t-1} + \alpha_2 z_{i,t-2} + \alpha_3 W_t + \alpha_4 ELECTION_t + \varepsilon_{it},$$

where z_{it} is a macroeconomic policy variable, W_t is a proxy for world GDP growth in year t, and $ELECTION_t$ is a dummy variable set equal to one in the period just before the election. We investigate four different macroeconomic variables in this context: the growth in government spending, changes in the money supply (M1), real interest rates, and inflation rates. We obtain a proxy for world GDP growth from the World Bank.

The results of the political business cycle regressions are presented in Table X. We estimate the regressions for the full sample and for the subsample of countries with exogenous election timing, respectively. Consistent with the findings of Alesina, Roubini and Cohen (1999), we find no evidence of pre-electoral manipulation in either the full sample or exogenous timing sample. Specifically, we do not find significant differences in growth in government spending, growth in the money supply, interest rates, or inflation rates in the pre-election period. This suggests that the election cycles in corporate investment are not due to the opportunistic behavior of political incumbents.

E. 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 expect that firms have more cash than usual 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:

$$I_{ijkt} = \beta_0 + \beta_1 \text{Election Dummy}_{jt} + \beta_2 Q_{ik,t-1} + \beta_3 CF_{ijk,t-1} + \beta_4 \% \Delta GDP_{j,t-1} + \varepsilon_{ijkt}$$

$$\text{Cash}_{ijkt} = \beta_0 + \beta_1 \text{Election Dummy}_{jt} + \beta_2 Q_{ik,t-1} + \beta_3 CF_{ijk,t-1} + \beta_4 Size_{ijk,t-1} + \beta_5 LEV_{ijk,t-1}$$

$$+ \beta_6 I_{ijkt} + \beta_7 \sigma(CF)_{kt} + \beta_8 DIV_{ijkt} + \alpha_j + \eta_{ijkt},$$

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 four 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 α_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 XI 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 XI 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.

V. Conclusion

We have documented an interesting empirical phenomenon in this paper. That is, firm-level corporate investment tends to be lower just before national elections for a large sample of countries around the world. Specifically, we find that, controlling for investment opportunities and the economic environment, corporate investment rates drop by an average of 4.8% in the period leading up to elections relative to investment rates in non-election years. We have investigated several possible explanations for this election-year effect and have found that the hypothesis that best fits the data is the political uncertainty hypothesis. That is, firms tend to become more cautious around elections and hold back on investment expenditures until the uncertainty surrounding the election outcome is resolved. This suggests, as in Bernanke (1983) and others, that fluctuations in uncertainty generate cycles in investment rates.

We also examined variation in the election effects both within and across countries. Within countries, the reduction in capital expenditures is larger when the election outcome is more difficult to predict. We also find that for very tight elections, post-election investment is slightly higher than normal. Across countries, we find that the effects are larger for countries with fewer checks and balances on executive authority, higher political risk, and higher ratios of central government debt to gross domestic product. We also find that changes in investment around national elections are larger in magnitude for firms in more politically sensitive industries. These results are robust to various empirical specifications for corporate in vestment, various measures of growth opportunities, mis-measurement Tobin's Q, and over various time periods and subsamples.

Our results support two important ideas. First, politics do appear to matter for the real decisions of firms. The normal political process and the possibility of policy changes around elections influence the way firms make investment decisions. Second, the result hightlights the importance of uncertainty in corporate investment dynamics. Changes in the degree of uncertainty lead to changes in investment expenditures, as hypothesized by Bernanke (1993) and others. 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
Political Systems and Election Type

This table presents political system and election characteristics for each of the 48 countries in our sample. The number of observations indicates the total number of firm-year observations included in Thomson Financial's Worldscope database for each country. Origin of a country's legal system is taken from La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998). 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. Other rules determining the classification of executive authority are described in the appendix. The election timing classification labels a country as having flexible timing if the national leader or legislative body have the option to call an election before the regularly scheduled election date. The sample period is between 1980 and 2005.

COUNTRY	Number of Observations	Legal Origin	Basis of Executive Legitimacy	Election Timing	Number of Elections
ARGENTINA	887	French	Presidential	Fixed	4
AUSTRALIA	12,226	English	Parliamentary	Flexible	9
AUSTRIA	1,916	German	Parliamentary	Flexible	7
BELGIUM	2,916	French	Parliamentary	Flexible	7
BRAZIL	3,674	French	Presidential	Fixed	2
CANADA	15,599	English	Parliamentary	Flexible	8
CHILE	1,922	French	Presidential	Fixed	4
COLOMBIA	430	French	Presidential	Fixed	4
CZECH REPUBLIC	508		Parliamentary	Flexible	3
DENMARK	3,700	Scandinavian	Parliamentary	Flexible	8
FINLAND	2,553	Scandinavian	Hybrid	Flexible	6
FRANCE	14,692	French	Hybrid	Fixed	4
GERMANY	14,472	German	Parliamentary	Flexible	8
GREECE	3,206	French	Parliamentary	Flexible	7
HUNGARY	386		Parliamentary	Fixed	4
INDIA	5,080	English	Parliamentary	Flexible	6
INDONESIA	3,003	French	Presidential	Fixed	1
IRELAND	1,386	English	Parliamentary	Flexible	8
ISRAEL	1,168	English	Parliamentary	Flexible	3
ITALY	5,025	French	Parliamentary	Flexible	6
JAPAN	52,495	German	Parliamentary	Flexible	9
LUXEMBOURG	499		Parliamentary	Fixed	4
MALAYSIA	8,301	English	Parliamentary	Flexible	5
MEXICO	1,801	French	Presidential	Fixed	4
NETHERLANDS	4,159	French	Parliamentary	Flexible	8
NEW ZEALAND	1,451	English	Parliamentary	Flexible	9
NORWAY	3,064	Scandinavian	Parliamentary	Fixed	7
PAKISTAN	1,361	English	Parliamentary	Flexible	5
PERU	762	French	Presidential	Fixed	4
PHILIPPINES	2,119	French	Presidential	Fixed	3
POLAND	856		Hybrid	Flexible	4
PORTUGAL	1,373	French	Parliamentary	Flexible	3
RUSSIA	388		Hybrid	Fixed	3
SINGAPORE	4,952	English	Parliamentary	Flexible	6
SLOVAKIA	131		Parliamentary	Flexible	2
SOUTH AFRICA	5,742	English	Parliamentary	Flexible	5
SOUTH KOREA	7,652	German	Hybrid	Fixed	4
				Continued on next page	

Continued from previous page

COUNTRY	Number of Observations	Legal Origin	Basis of Executive Legitimacy	Election Timing	Number of Elections
SPAIN	3,249	French	Parliamentary	Flexible	7
SRI LANKA	269	English	Presidential	Flexible	3
SWEDEN	5,097	Scandinavian	Parliamentary	Fixed	7
SWITZERLAND	4,504	German	Parliamentary	Fixed	5
TAIWAN	7,613	German	Hybrid	Fixed	3
THAILAND	4,595	English		Flexible	7
TURKEY	1,742	French	Parliamentary	Flexible	3
UNITED KINGDOM	36,050	English	Parliamentary	Flexible	6
UNITED STATES	50,257	English	Presidential	Fixed	7
VENEZUELA	376	French	Presidential	Fixed	4
ZIMBABWE	159	English	Presidential	Fixed	2

Table II
Summary Statistics

Panel A reports various summary statistics for national elections held between 1980 and 2005 in 48 countries. Political platform presents World Bank's classification of party orientation with respect to economic policy. An election is classified as a regular election if it is held within six months of the constitutionally required election date. The checks and balances measure counts the number of veto players in the national government on an annual basis. The ICRG Government Stability Rating assigns a number between 1 and 12 for every country-year, where higher values correspond to more stable governments. The index of central bank independence (CBI) measures the extent to which the central bank is independent from the political power. The index is a continuous score ranging between zero and one, where one indicates maximum independence. Government Spending/GDP is the ratio of central government spending to GDP as reported by ICRG. Panel B reports summary statistics for the firm characteristics utilized in the analysis. Panel C reports summary statistics for investment rates in both election years and non-election years, where the investment rate is defined as capital expenditures scaled by the beginning-of-year book value of total assets. See appendix for additional variable descriptions as well as the variable sources.

Panel A: Election Characteristics

	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		
Percent of Votes Won 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		
Proportion of Elections with Exogenous Timing (%)	45.6		
Change of Government Head (%)	54.3		
Change of Ruling Party (%)	43.3		
Checks and Balances	3.95	4.00	1.79
ICRG Government Stability Rating	7.82	8.00	1.91
Central Bank Independence	0.42	0.40	0.19
Government Spending/GDP	0.28	0.26	0.11

Panel B: Firm Characteristics

	N	Mean	Median	St.Dev.
Investment Rate (I_t/A_{t-1})	101,587	0.078	0.051	0.094
Q	101,587	1.587	1.240	1.140
Cash Flow	101,587	0.098	0.092	0.132
Cash	101,500	0.125	0.077	0.139
ln(Assets)	101,587	12.531	12.422	1.925
Leverage	101,380	0.244	0.221	0.191

Panel C: Investment Rates (I_t/A_{t-1}): Election vs. Non-Election Years

	Mean	Median	St.Dev.
Election Year	0.0727	0.0473	0.0896
Non-Election Year	0.0795	0.0523	0.0955
Difference	-0.0067		
Diff (t-stat)	-9.74		

Table III
Baseline Investment Regressions

This table presents estimates from investment regressions of the type:

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

where i indexes the firm, j indexes the country, and t denotes the year. The left hand side variable is capital expenditures scaled by beginning-of-year total assets. Q is the ratio of the market value of assets to the book value of assets. CF is cash flow scaled by beginning-of-year total assets, where cash flow is defined as earnings before interest and taxes minus taxes and interest expense plus depreciation and amortization. ΔGDP is the the percentage change in real gross domestic product for a given country over the previous year. If the date of the election lies between 60 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. Standard errors, clustered by country and year, are reported in brackets.

	(1)	(2)	(3)	(4)	(5)	(6)
Election Year Dummy	-0.0067	-0.0036	-0.0036	-0.0037	-0.0038	-0.0041
	[0.0016]***	[0.0014]***	[0.0014]***	[0.0012]***	[0.0013]***	[0.0014]***
Q			0.0110	0.0056	0.0055	0.0041
			[0.0010]***	[0.0012]***	[0.0012]***	[0.0010]***
Cash Flow				0.1885	0.1866	0.1737
				[0.0165]***	[0.0159]***	[0.0117]***
GDP Growth					0.0365	0.0402
					[0.0192]*	[0.0181]**
Constant	0.0794	0.0285	0.0289	0.0272	0.0263	0.0084
	[0.0053]***	[0.0023]***	[0.0022]***	[0.0020]***	[0.0021]***	[0.0020]***
Observations	101,587	101,587	101,587	101,587	101,587	101,587
R-squared	0.00	0.00	0.01	0.07	0.07	0.13
Fixed Effects	None	Firm	Firm	Firm	Firm	Firm
		Year	Year	Year	Year	Continent×Year

Table IV

Elections and Investment: Variation Across Countries

This table presents estimation results for the following regression:

$$I_{ijt} = \beta_i + \beta_1 \text{Election}_{jt} + \beta_2 \text{Election}_{jt} \times X_{jt} + \beta_3 X_{jt} + \beta_4 Q_{i,t-1} + \beta_5 CF_{i,t-1} + \beta_6 \% \Delta GDP_{j,t-1} + \gamma_t + \varepsilon_{ijt},$$

where X_{jt} is a country-specific characteristic. The country characteristics variable is interacted with all the other independent variables to allow for differences across countries with regard to different country characteristics. Common law is a dummy variable which equals one if the firm operates in a common law country, and zero if civil law country. Presidential System is a dummy variable, which is set to one if the type of election is presidential, and zero if legislative. Checks measures the number of veto players in a political system as reported in the World Bank Database of Political Institutions. International Country Risk Guide (ICRG) Government Stability rating is a time-varying measure of government stability with large numbers being associated with stable government. Government/GDP is the ratio of central government spending to GDP in a given year. Appendix A contains more detailed variable description. Standard errors, clustered by country and year, are reported in brackets.

	Country Characteristic				
	(1)	(2)	(3)	(4)	(5)
	Common Law	Presidential System	Checks	ICRG Govt. Stability	Government/GDP
Election Year Dummy	-0.0087	-0.0068	-0.0066	-0.0066	-0.0042
	[0.0033]***	[0.0016]***	[0.0013]***	[0.0026]**	[0.0022]*
Country Characteristic×Election Dummy	0.0041	0.0015	0.0007	0.0004	-0.0114
	[0.0022]*	[0.0019]	[0.0003]**	[0.0002]**	[0.0036]***
Country Characteristic	0.0026	0.0044	-0.0001	-0.0010	-0.0006
	[0.0067]	[0.0037]	[0.0004]	[0.0007]	[0.0094]
Constant	0.0523	0.0524	0.0301	0.0075	-0.0087
	[0.0101]***	[0.0065]***	[0.0031]***	[0.0054]	[0.0077]
Observations	101,515	101,515	101,459	101,364	97,118
R-squared	0.13	0.13	0.07	0.07	0.06
Fixed Effects	Industry	Industry	Firm	Firm	Firm
	Year	Year	Year	Year	Year

Table V
Real GDP Growth and Election Timing

The table reports average percentage growth of real GDP relative to the previous year around various election periods. Average GDP growth is reported in two ways. First, equal-weighed average GDP assigns same weights to each country each year. Secondly, sample-weighed average assigns the same weights to each firm-year observation. Election dates and GDP statistics are obtained from the World Bank.

Panel A: Equal-Weighted Across Country-Years

	Overall	Non-Election Years	Election Years	Regular Elections	Early Elections
Mean	6.11%	6.17%	5.97%	5.38%	7.01%
SE	(0.39%)	(0.47%)	(0.71%)	(0.95%)	(1.02%)

Panel B: Sample-Weighted Averages

	Overall	Non-Election Years	Election Years	Regular Elections	Early Elections
Mean	4.70%	4.48%	5.51%	4.19%	6.98%
SE	(0.03%)	(0.03%)	(0.06%)	(0.09%)	(0.07%)

Table VI
Election Timing and Predictability of Outcomes

This table presents estimation results for the following regression:

$$I_{ijt} = \beta_i + \beta_1 \text{Election}_{jt} + \beta_2 \text{Election}_{jt} \times Close_{jt} + \beta_3 Q_{i,t-1} + \beta_4 CF_{i,t-1} + \beta_5 \% \Delta GDP_{j,t-1} + \gamma_t + \varepsilon_{ijt},$$

where *Close* is a dummy variable set to one if the vote difference between the winner and the runner-up was below the 25th percentile of the victory margin distribution across all elections within an election type. The first two columns present results for the sample of countries for which the timing of elections is fixed in time by electoral law. The last two columns report the results for the sample of countries for which the incumbent government has the option to call the election early. Standard errors, clustered by country and year, are reported in brackets.

	Exogenous Election Timing		Endogenous Election Timing	
	(1)	(2)	(3)	(4)
Election Year Dummy	-0.0041	-0.0021	-0.0035	-0.0032
	[0.0018]**	[0.0019]	[0.0015]**	[0.0011]***
Election Year×Close Election		-0.0093		-0.0019
		[0.0031]***		[0.0024]
Constant	0.0249	0.0253	0.0416	0.0415
	[0.0014]***	[0.0020]***	[0.0620]	[0.0664]
Observations	45,897	45,897	55,690	55,690
R-squared	0.08	0.08	0.06	0.06
Fixed Effects	Firm	Firm	Firm	Firm
	Year	Year	Year	Year

Table VII
Table VII
Changes in Investment in the Post-Election Period

This table presents estimation results for the following regression:

$$I_{ijt} = \alpha_i + \beta_1 \text{Election}_{jt} + \beta_2 \text{Election}_{jt} \times Close_{jt} + \beta_3 \text{Post-Election}_{jt} + \beta_4 \text{Post-Election}_{jt} \times Close_{jt}$$
$$+ \beta_5 Q_{i,t-1} + \beta_6 CF_{i,t-1} + \beta_7 \% \Delta GDP_{j,t-1} + \gamma_t + \varepsilon_{ijt},$$

where the election year dummy takes a value of one if the election date lies between 60 days prior to the end of the fiscal year t and 274 after the end of fiscal year t. All fiscal years for which the election date does not fall within this range have the election dummy set to a value of zero. The post-election dummy takes a value of one in years in which the fiscal year beginning no more than 60 days before the election and the fiscal year end is no more than 365 days after the election date. *Close* is a dummy variable set to one if the vote difference between the first and second place candidates was below the 25th percentile of the victory margin distribution across all elections within an election type. Standard errors, clustered by country and year, are reported in brackets.

	Full Sample	Exogenous Timing Sample		Endogenous Timing Sample	
	(1)	(2)	(3)	(4)	(5)
Election Year Dummy	-0.0051	-0.0042	-0.0036	-0.0034	-0.0033
	[0.0021]**	[0.0020]**	[0.0020]	[0.0013]***	[0.0014]**
Post-Election Dummy	0.0024	0.0026	0.0031	0.0048	0.0051
	[0.0026]	[0.0025]	[0.0026]	[0.0030]	[0.0055]
Election Year×Close Election			-0.0090		-0.0027
			[0.0018]***		[0.0020]
Post-Election×Close Election			0.0042		0.0023
			[0.0020]**		[0.0015]
Constant	0.0534	0.0692	0.0842	0.0439	0.0736
	[0.0071]***	[0.0075]***	[0.0037]***	[0.0042]***	[0.0070]***
Observations	101,515	45,846	45,897	55,669	55,690
R-squared	0.13	0.14	0.00	0.13	0.00
Fixed Effects	Firm	Firm	Firm	Firm	Firm
	Year	Year	Year	Year	Year

Table VIII
Additional Tests and Robustness

This table presents estimation results from various robustness tests. The first column includes a dummy variable set to one if the firm belongs to a politically sensitive industry, where our classification of sensitive industries includes Tobacco products, pharmaceuticals, health care services, defence, petroleum and natural gas, telecommunications, and transportation. The second column includes a dummy variable set equal to one if the incumbent national leader at the time of the election is classified as either right-wing or centrist by the World Bank. The third column reports the estimation results excluding the countries involved in the financial crisis in the 1990s (Argentina, Indonesia, Malaysia, Mexico, Philippines, South Korea, Thailand, Turkey, and Venezuela). The random placebo dummy variable is a randomly generated election date for each country, calculated such that the number and periodicity of elections within each country is equal to that of the sample data. The next column reports the results excluding the countries with the three biggest firm-year observations in our sample. The final column reports average coefficients from country-by-country regressions of the investment specification. The standard error of the mean is included in brackets. For the remaining regressions, standard errors are clustered by country and year and reported in brackets.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Sensitive Industries	Incumbent Ideology	Crisis Countries Omitted	Lagged Investment	Random Placebo	US, UK, Japan Omitted	Equal-Weighting by Country
Election Year Dummy	-0.0036	-0.0042	-0.0051	-0.0041	0.0001	-0.0031	-0.0095
	[0.0014]**	[0.0018]**	[0.0016]***	[0.0013]***	[0.0004]	[0.0009]***	[0.0049]*
Sensitive Industry	0.0006						
	[0.0007]						
Election×Sensitive Industry	-0.0026						
	[0.0014]*						
Election×Market-Friendly Incumbent		-0.0053					
		[0.0023]**					
Observations	101,587	101,587	87,988	98,352	101,587	54,859	48
R-squared	0.07	0.07	0.07	0.07	0.07	0.07	
Fixed Effects	Firm	Firm	Firm	Firm	Firm	Firm	
	Year	Year	Year	Year	Year	Year	

Table IX
Political Connections and Incumbent Opportunism

This table presents estimation results of the baseline specification for various sub-samples. The first column reports the estimation results of the investment specification omitting the politically connected firms from Faccio (2006). Column (2) reports estimation results for the sub-sample with a high degree of central bank independence (CBI). Specifically, the sample includes any observation in which the CBI measure is greater than the 75th percentile of the CBI distribution. The CBI index is defined according to Cukierman, Webb, and Neypati (1992). The election year dummy in the final column is modified such that it is set to one only if the incumbent leader is not running for re-election in any given election, and zero otherwise. Standard errors, clustered by country and year, are reported in brackets.

	(1)	(2)	(3)
	Politically Connected Firms Omitted	High Central Bank Independence	Incumbent Not Running
Election Year Dummy	-0.0036	-0.0040	-0.0052
	[0.0013]***	[0.0018]**	[0.0013]***
Constant	0.0262	0.0066	0.0247
	[0.0020]***	[0.0025]***	[0.0021]***
Observations	98,137	43,322	101,587
R-squared	0.07	0.06	0.07

Table X
Political Business Cycle Regressions

This table reports the estimation results of political business cycle models based on panel regressions of time-series cross-section data for macroeconomic variables which take the general form

$$Y_{jt} = \alpha_j + \alpha_1 Y_{j,t-1} + \alpha_2 Y_{j,t-2} + \alpha_3 \text{World GDP Growth}_t + \alpha_4 \text{Election} jt + \varepsilon_{jt},$$

where Y_{jt} is the macroeconomic variable of interest and α_j is the country fixed-effect term. We report regression results for annual growth in government spending (%ΔG), annual growth in the money supply (%ΔM1), the real interest rate (r), and the rate of inflation (i). The first four columns report the results for the entire sample of countries. The final four columns report the regression results for only those countries with exogenous timing of elections. Macroeconomic data are obtained from the IMF Government Financial Statistics database. Standard errors are clustered by country and are reported in brackets.

	Full Sample				Exogenous Timing Sample			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	%ΔG	%ΔM1	r	i	%ΔG	%ΔM1	r	i
Election Year	0.0013	-0.0164	0.0072	0.042	0.0012	-0.0357	0.0055	0.0609
	[0.0042]	[0.0148]	[0.0045]	[0.1867]	[0.0059]	[0.0284]	[0.0035]	[0.1222]
Y_{t-1}	-0.1367	0.0463	0.5385	0.956	0.0458	0.0225	0.4679	0.618
	[0.0824]	[0.0191]**	[0.0830]***	[0.3082]***	[0.1087]	[0.1005]	[0.0575]***	[0.0582]***
Y_{t-2}	-0.1321	-0.0198	-0.0806	-0.2816	-0.179	0.0596	0.0378	-0.1913
	[0.0747]*	[0.0359]	[0.0526]	[0.0689]***	[0.1173]	[0.0683]	[0.0359]	[0.1178]
World GDP Growth	-0.3033	3.0635	-0.364	25.5446	-0.3197	1.4437	-0.5148	8.0223
	[0.3591]	[1.3757]**	[0.3266]	[17.0890]	[0.6001]	[2.0377]	[0.3093]	[5.9885]
Observations	189	777	1010	1242	95	294	376	518
R-squared	0.04	0.01	0.29	0.11	0.06	0.02	0.28	0.3

Table XI

Investment and Cash Holdings: Simultaneous Equations Estimates

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

$$I_{ijkt} = \beta_0 + \beta_1 \text{Election Dummy}_{jt} + \beta_2 Q_{ik,t-1} + \beta_3 CF_{ijk,t-1} + \beta_4 \%\Delta GDP_{j,t-1} + \varepsilon_{ijkt}$$

$$\text{Cash}_{ijkt} = \beta_0 + \beta_1 \text{Election Dummy}_{jt} + \beta_2 Q_{ik,t-1} + \beta_3 CF_{ijk,t-1} + \beta_4 Size_{ijk,t-1} + \beta_5 LEV_{ijk,t-1} + \beta_6 I_{ijkt} + \beta_7 \sigma(CF)_{kt} + \beta_8 DIV_{ijkt} + \alpha_j + \eta_{ijkt},$$

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_{ijkt} is a dummy variable set equal to one if the firm pays a dividend in year t and zero otherwise, and α_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***	0.0125***	0.1948***	0.0550***						No
	(0.0007)	(0.0008)	(0.0021)	(0.0027)						
Cash Holdings	0.0067***	0.0902***	0.1556***		-0.0055***	-0.2692***	0.2733**	1.314***	-0.0586***	Yes
	(0.0014)	(0.0025)	(0.0267)		(0.0004)	(0.0072)	(0.1232)	(0.0681)	(0.0014)	
$H_0 : \beta_{elect}^{Inv} + \beta_{elect}^{Cash} = 0$										
$\chi^2(1)$	0.0800									
p-value	0.7745									

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 60 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.
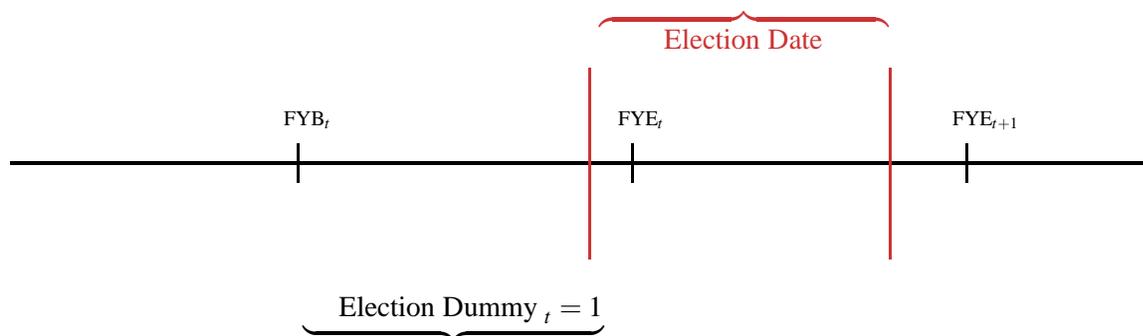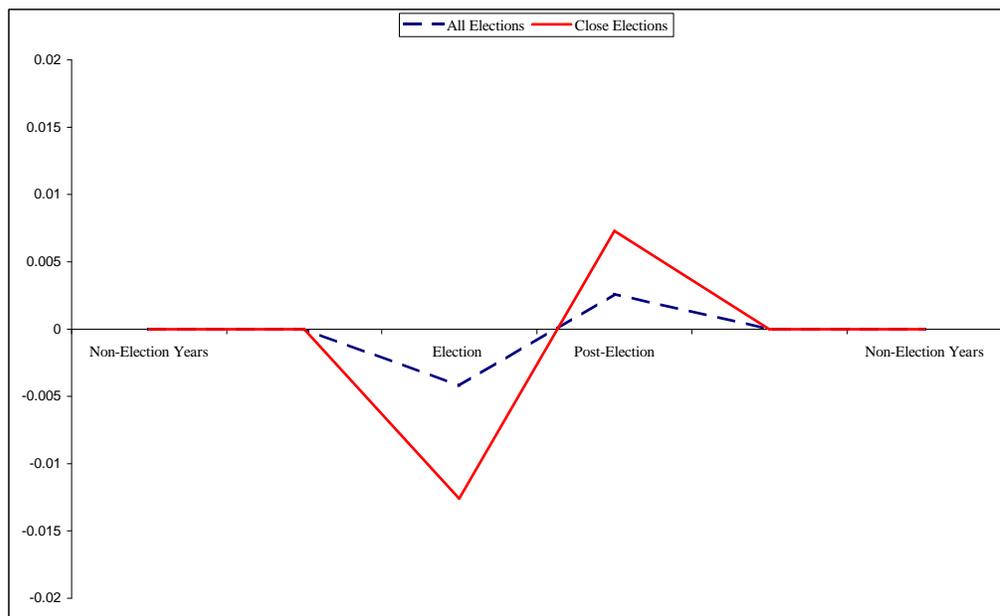

Election Date

FYB_t FYE_t FYE_{t+1}

Election Dummy $_t = 1$

Figure 2. Investment around National Elections

This figure displays the estimates from the regression results reported in Table VII of the following specification:

$$I_{ijt} = \alpha_i + \beta_1 \text{Election}_{jt} + \beta_2 \text{Election}_{jt} \times Close_{jt} + \beta_3 \text{Post-Election}_{jt} + \beta_4 \text{Post-Election}_{jt} \times Close_{jt}$$
$$+ \beta_5 Q_{i,t-1} + \beta_6 CF_{i,t-1} + \beta_7 \% \Delta GDP_{j,t-1} + \gamma_t + \varepsilon_{ijt},$$

The sample includes only those countries for which the timing of elections is exogenous. The variable close is a dummy variable set equal to one if the margin of victory for a given election was smaller than the 25th percentile of the distribution for all exogenously timed elections. The scale of the vertical axis is measured with respect to years which are neither immediately before nor immediately after an election. The dashed line represents changes in investment for all elections (based on estimates from column (2) of Table VII), and the solid line displays changes in investment for the elections with close outcomes (column (3) of Table VII).

Appendix A: Variable Descriptions

Variable	Description
Worldscope: Firm Characteristics	
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 are based on the findings and references of Herron, Lavin, Cram, and Silver (1999) and includes Tobacco products, pharmaceuticals, health care services, defence, petroleum and natural gas, telecommunications, and transportation.
Election/Country Variables	
Election Year	Election year dummy variable takes a value of one if the date of the election lies between 60 days prior to the end of the fiscal year t and 274 days after the end of fiscal year t. 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
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.
Exogenous Election	An election is classified to be exogenous if its timing is fixed by constitution or electoral law.

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.
Market-Friendly	A dummy variable set to one if the incumbent government in the year leading up to an election is right leaning or centrist, and zero if left-leaning. The World Bank refers to various sources including Political Handbook yearbooks in order to identify party orientation with respect to economic policy. The World Bank classifies a government as right-leaning if the political party is defined as conservative, Christian democratic, or right-wing by the sources. 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. See Keefer (2007) for more detail on the classification of political platforms.
ICRG Govt. Stability	The government stability index assigns numbers between 1 and 12, where higher values indicate more stable governments. The index is updated on a monthly basis and assesses the government's ability to carry out its declared programs, and its ability to stay in office. The data are obtained from International Country Risk Guide (ICRG) produced by Political Risk Services.
Government/GDP	Central government expenses as a percentage of GDP, taken from World Development Indicators provided by the World Bank.
Post Election Dummy	The post-election dummy takes a value of one in years in which the fiscal year beginning no more than 60 days before the election and the fiscal year end is no more than 365 days after the election date.
CBI index	The index of central bank independence (CBI) measures the extent to which the central bank is independent from the political power. This annual, time-varying index is taken from Cukierman, Webb, and Neypati (1992) for the period between 1980 and 1989, and from Polillo and Guillen (2005) for the period between 1990 and 2000.
M1 Growth	Percentage change in the M1 money supply, obtained from Political Risk Service's International Country Risk Guide (ICRG).
Real Interest Rate	Obtained from World Development Indicators provided by World Bank.
Inflation	Inflation rate based on CPI obtained from the World Bank.
GDP	Real Gross Domestic Product obtained from the World Bank.

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 I).

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-

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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 I 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 fine that the results remain intact.