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THE REAL EFFECTS OF POLITICAL UNCERTAINTY:

ELECTIONS AND INVESTMENT SENSITIVITY TO STOCK PRICES*

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Abstract

We show that political uncertainty surrounding elections can affect how corporate investment responds to stock prices. In a large panel of elections around the world, investment is 40% less sensitive to stock prices during election years compared to non-election years. The decrease in investment-to-price sensitivity appears to be due to stock prices becoming less informative during election years making them noisier signals for managers to follow. Further, the drop in investment-to-price sensitivity is larger when election results are less certain, in countries with higher corruption, large state ownership, and weak standards of disclosure by politicians. Finally, we show that election uncertainty leads to inefficient capital allocation, reducing company performance.

JEL classification: G15 (international financial markets), G38 (government policy and regulation), P16 (political economy)

Keywords: political uncertainty, elections, information asymmetry, capital allocation

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I. Introduction

Numerous papers argue that politics can shape economic outcomes, affect asset prices, and change financial risk.[1] Yet only a few studies explore how political forces influence managerial decisions at the corporate level.[2] We attempt to fill this gap in the literature by providing firm-level evidence on how political uncertainty surrounding national elections affects investment-to-price sensitivity.[3] An advantage of focusing on national elections is that, in most instances, they are exogenous political episodes that are well distributed across countries and over time, providing us with a powerful econometric test.

Our main finding is that elections are associated with a significant decrease (in terms of magnitude and statistical significance) in investment-to-price sensitivity. As depicted in Fig. 1, for our sample of 466 elections across 79 countries over the 1980 to 2006 period, investment-

[1] Alesina and Rodrik (1994), Bloomberg and Hess (2001), and Knack and Keefer (2006) investigate how politics affect economic outcomes. Fisman (2001), Santa-Clara and Valkanov (2003), Leblang and Mukherjee (2005), Bernhard and Leblang (2006), Knight (2006), Snowberg et al. (2007), Wolfers and Zitzewitz (2009), and Belo, et al. (2010) relate political variables to stock market performance. Erb, Harvey, and Viskanta (1996) link political risk to financial risk. Roe and Siegel (2008) argue that political instability hinders financial market development. Claessens et al. (2008) analyze the value of political connections around elections in Brazil and document that firms that contribute to elected officials experience higher stock returns. Cohen et al. (2009) show that politically motivated budget spending reduces corporate investment. Kostovetsky (2009) examines the role of political connections in the 2008 mortgage crisis. Duchin and Sosyura (2011) show that firms with political connections are more likely to receive government financing. Two related papers, Aggarwal et al. (2009) and Cooper et al. (2009), link political contributions to subsequent stock returns. In a theoretical paper, Pástor and Veronesi (2010) derive that political uncertainty is associated with lower stock prices, higher return volatility, and larger systematic risk.

[2] Bertrand et al. (2006) show that firms with politically connected CEOs create more jobs and acquire assets during election years. Faccio (2006) finds a positive valuation effect when corporate directors have political connections. Julio and Yook (2009) show that investments at the firm level follow political cycles. Leuz and Oberholzer (2006) find that firms with political connections rely less on publicly traded securities to raise capital. Ramanna and Roychowdhury (2009) document that firms with more extensive outsourcing activities relied more on income-decreasing discretionary accruals during the 2004 congressional elections.

[3] The relation between corporate investment and prices has been extensively researched (see, e.g., Morck et al. (1990), Blanchard et al. (1993), Kaplan and Zingales (1997), Chen et al. (2007), Bakke and Whited (2009), McConnell and Ovtchinikov (2009), Polk and Sapienza (2009), and Foucault and Frésard (2010)). In some papers, the sensitivity of investment to prices is taken to be a measure of the quality of capital allocation (e.g., Wurgler (2000), Durnev et al. (2004), and Bushman et al. (2007)).

to-price sensitivity is 40% lower during election years compared to non-election years. We further find that political uncertainty surrounding elections has a real impact on how managers allocate capital: companies that experience a drop in investment-to-price sensitivity during election years show worse subsequent performance. Specifically, if a company's investment becomes less responsive to stock prices during an election year, the company observes 6% lower sales growth over the two years following the election. Overall, the results suggest that country-level politics have real effects on corporate decision-making and company performance.

We consider two potential explanations for why managers pay less attention to stock prices during elections. First, according to the "information view" of investment, elections are associated with uncertainty about future government policies, which may lower the information quality of stock prices. Prior work shows that in making investment decisions, managers rely on stock prices more as the amount of private firm-specific information contained in prices increases (Durnev et al. (2004) and Chen et al. (2007)). If uncertainty about election outcomes and future government policies makes investors less informed, managers will be less willing to base their decisions on the information revealed by stock prices. A decrease in information quality is therefore expected to lower the sensitivity of investment to prices. In addition, managers might pay less attention to prices if they become better informed (relative to outside investors) about post-election changes in economic policies.

Second, according to the "political view" of investment, the information contained in stock prices may simply be less relevant during election years. In countries where interest groups have significant influence, investment is often politically motivated and hence stock prices

have less room to guide investment decisions. Similarly, investment decisions may be more dependent on political ties and less dependent on stock prices in countries where politically connected managers have preferential access to information or financing, or where managers can pay bribes to "buy" preferential treatment from politicians.

We begin our analysis by comparing investment-to-price sensitivity in election years versus non-election years using a sample of U.S. companies. We find that for U.S. companies, investment is less responsive to stock prices during election years, with the magnitude of the drop in investment-to-price sensitivity close to 20%. Next, we conduct this comparison using a panel of international companies (214,046 firm-year observations from 79 countries). For this sample of firms investment-to-price sensitivity is 40% lower during election years.

We find that the link between investment and stock prices is even weaker when election outcomes are harder to predict, e.g., when elections are closely contested. Additional analysis also shows that, consistent with uncertainty during election years affecting the quality of information contained in stock prices, the amount of firm-specific information (as measured by firm-specific return variation) is lower during election years. However, we find weaker evidence of increased information asymmetry between managers and outside investors (as measured by return autocorrelation or earnings surprises) during election years.

The drop in investment-to-price sensitivity during election years is not uniform across countries. In additional tests we therefore condition the drop in investment-to-price sensitivity on a number of factors that reflect the level of a country's economic and institutional development. These factors include economic development, financial market development, investor protection, quality of legal environment, media freedom, corruption, state ownership,

and disclosure by politicians. Interestingly, of these conditioning factors, only the last three (corruption, state ownership, and disclosure by politicians) are significantly related to the drop in investment-to-price sensitivity. This implies that if a company is located in a country with a higher level of corruption, greater state presence, or less public disclosure of politicians' business interests and finances, investment-to-price sensitivity is lower during election years. One interpretation of this result is that, consistent with the political view of investment, the information available in stock prices becomes less useful for managerial investment decisions in such countries when managers can use political connections or bribe politicians to gain, for example, information access, privileged treatment, or state financing.

We also find that investment becomes more sensitive to cash flow during election years. This result lends support to the informational view of investment: uncertainty with respect to future policies can increase the cost of outside financing, making investment more responsive to fundamentals than to prices.[4] However, we show that the observed decrease in investment-to-price sensitivity is not driven solely by capital constraints – the main results hold for portfolios sorted according to various measures of capital constraints.

Finally, we test the relation between political uncertainty and firm performance. If prices reflect future profitability of investment projects, investment-to-price sensitivity can be interpreted as a measure of the quality of capital allocation. This is because if capital is allocated efficiently, capital is withdrawn from sectors with poor prospects and invested in profitable sectors. Thus, if political uncertainty reduces investment efficiency, firm

[4] Numerous papers (e.g., Fazzari et al. (1988, 2000) and Becker and Sivadasan (2008)) argue that investment is more responsive to cash flow for financially constrained firms. Kaplan and Zingales (1997, 2000), Gomes (2001), Alti (2003), and Bushman et al. (2009), however, challenge this view, arguing that cash can signal better investment opportunities.

performance is likely to suffer. Consistent with this argument, we show that firms that experience a drop in investment-to-price sensitivity during election years perform worse over the two years following elections. This result send a strong message that political uncertainty has a significant impact on real economic outcomes – political uncertainty can deteriorate company performance because of inferior capital allocation.

This paper contributes to several streams of literature. First, we link polity to real managerial decision-making. Whereas a sizeable literature relates politics to economic outcomes, ours is a first attempt to link elections to investment choices, capital allocation, and company performance. Furthermore, this study adds to the literature on investment-to-price sensitivity by showing that political uncertainty triggered by elections lowers investment-to-price sensitivity. We also obtain a novel result that elections change the information content of stock prices and information distribution between managers and investors.

In a related article, Julio and Yook (2009) also use an international sample to study how investment changes around national elections. The authors uncover political cycles of investments and show that electoral uncertainty decreases corporate investments at the firm level. Their main argument is that political uncertainty creates uncertainty about future investment payoff, and in response rational managers postpone investments until uncertainty is resolved.[5] While some of our tests confirm Julio and Yook's (2009) main results (we find partial evidence that investment is lower during election years), our paper is different from Julio and Yook (2009) in three main respects. First, we examine how uncertainty with respect to election outcomes affects not investment but investment response to stock prices. Our main

[5] A similar argument is made by Bloom et al. (2007) and Bloom (2009). These papers argue that investment is lower and less responsive to changes in demand conditions when policy uncertainty is large.

result is that, during election years, managers invest less when firm value increases and more when it decreases. Second, we show that elections change the amount of information contained in stock prices. Third, we document that elections have a real impact on capital allocation and company performance. Taken together, our findings shed further light on the corporate finance implications of political cycles.

Our analysis on the link between the distribution of information during election years and the responsiveness of investment to stock prices is also related to Chen et al. (2007) and Bakke and Whited (2009). Chen et al. (2007) show that the relation between investment and prices is stronger when prices contain more private information. In a related study, Bakke and Whited (2009) use an errors-in-variables consistent GMM estimation method and document that information and not mispricing guides investment. Our findings corroborate Chen et al.'s and Bakke and Whited's conclusions.

The remainder of the paper is organized as follows. In Section II, we motivate our empirical tests. The sample is described in Section III. Section IV presents our empirical results. Robustness issues are addressed in Section V. Finally, Section VI concludes.

II. Background and Motivation

In this paper, we argue that, in making investment decisions, managers rely on stock prices less during election years. On the one hand, increased political uncertainty surrounding elections[6] can make stock prices noisier, or can make managers more informed relative to

[6] Several studies show that political uncertainty increases around national elections. For example, Bialkowski et al. (2008) document that market indexes are more volatile around national elections, and Boutchkova et al. (2009) show that politically-sensitive industries have less predictable cash flows during elections. Mei and Guo (2004)

outside investors, in which case stock prices are less informative for investment. We term this the information view of investment. On the other hand, even if stock prices are informative, election years are associated with an increase in politically motivated investment and an increase in preferential access to information or government funds, in which case the information contained in prices may be ignored by managers. We term this the political view of investment. In the following subsections, we discuss these two effects of political uncertainty on investment, the role of financial constraints, and the implications for firm performance.

A. The Information View of Investment

For a manager to follow her company's stock price in making investment decisions, the stock price has to contain private information not otherwise available to the manager. Using a large sample of U.S. firms, Chen et al. (2007) show that investment is more responsive to stock prices when prices incorporate more private firm-specific information. Thus, according to the information view of investment, a decrease in investment-to-price sensitivity would suggest that political uncertainty surrounding elections makes stock prices noisier, makes managers more informed relative to outside shareholders, or both.

Stock prices are likely to become noisier, that is, less informative for investment, during election years because newly elected political executives and parties often unexpectedly change tax, labor, and foreign trade policies that can affect future firm performance.

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document that stock market were more volatile during election periods surrounding the 1998 Asian financial crisis.

Uncertainty with respect to future economic policies increases uncertainty with respect to firms' future cash flows, decreasing the quality of the information contained in stock prices.

Managers are also less likely to follow stock prices during election years if they become more informed relative to the market during such periods. This might happen if, for example, managers possess better knowledge about how potential changes in economic policies would affect their companies. Thus, to the extent that increased uncertainty in the market during election years results in increased information asymmetry between managers and outside investors, investment-to-price sensitivity is expected to be lower in election years. Furthermore, since some elections are associated with greater uncertainty over their outcomes than others (Snowberg et al. (2007)), the drop in the sensitivity should be related to how difficult it is to predict election results. We therefore expect the impact of elections on investment-to-price sensitivity to be larger for elections with more ambiguous outcomes.

B. The Political View of Investment

According to the political view of investment, managers may pay less attention to stock prices, or even ignore the stock market altogether, if their investment decisions are politically motivated, or if they have preferential access to government funds whose availability is unrelated to stock prices. Political motives may distort investment decisions because, for example, companies may over-invest in contracting sectors to promote full employment. Consistent with this view, Bertrand et al. (2006) find that firms with politically connected CEOs create more jobs and expand assets during election years. Atanassov and Kim (2009) document that strong union laws lead to assets sales of poorly performing firms, in order to

prevent large-scale layoffs. Politics can also lower the value of information contained in stock prices if managers have preferential access to information that is not shared with outside investors. This can happen if managers and CEOs are influential members of the political elite (Faccio (2006)), or if they can bribe politicians to gain access to confidential information. Moreover, politically connected managers are more likely to deliberately obfuscate accounting numbers to hide unlawful activities. This is confirmed empirically by Chaney et al. (2008) who find that the quality of earnings reported by politically affiliated firms is significantly worse than by non-affiliated firms. Finally, scarce outside financing becomes unevenly distributed among companies if managers are politically-connected making investment more dependent on state financing than on market information. For example, Leuz and Oberholzer (2006) study the role of political ties for firms' financing strategies and their long-run financial performance. They find that firms with political connections rely less on publicly traded securities to finance their operations.

In sum, in countries where political connections are important, managers are less likely to use stock prices as a guide in making capital allocation decision. This effect is expected to be stronger during election years, because this is when politically connections are most valuable.

To examine the “political” view of investment, we relate countries’ investment-to-price sensitivity during election years to country-level economic and institutional characteristics. We expect the drop in the sensitivity to be larger in countries where state ownership is substantial and where managers and politicians are less accountable to the public, for instance, in countries with higher levels of corruption or with less public disclosure of politicians’ business interests.

C. Role of Financial Constraints

Evidence in support of the informational argument may also be consistent with a higher cost of outside funding: if stock prices become less informative during election years, the cost of financing may increase in these years. Labmert et al. (2009) theoretically investigate how information differences across investors affect the cost of capital. They show that, in a rational expectations model, information precision is a primary determinant of the cost of capital. Thus, in addition to investigating how investment reacts to stock prices, we also examine how investment reacts to cash flows, which some prior work shows to be a measure of financial constraints (e.g., Fazzari (1998)).

D. Implications of Political Uncertainty for Performance

Prior studies (e.g., Wurgler (2000), Bushman and Smith (2001), Durnev et al. (2004), Chen et al. (2007), Biddle et al. (2009), Claessens et. al (2010)) suggest that higher quality financial information increases investment efficiency. If investment-to-price sensitivity is lower because stock prices become noisier during election years, it is possible that capital allocation becomes less efficient. In turn, if political uncertainty triggered by elections reduces investment efficiency, company performance is likely to suffer. We therefore also examine the relation between election-year investment-to-price sensitivity and post-election-year performance.

III. Sample and Regression Specifications

A. Sample Construction and Descriptive Statistics

To construct our sample, we begin by collecting information on countries' political system and elections from the World Bank's 2006 Database of Political Institutions (Beck et al. (2001)). We cross-check the election data with data reported by *International Institute for Democracy and Electoral Assistance, Center on Democratic Performance, Journal of Democracy, Elections around the World, Election Guide,* and *The CIA World Factbook*.

Next, we obtain firm data (capital expenditures, total assets, sales, market value of equity, book value of equity, net income, annual stock return, R&D expenses, and depreciation and amortization expenses) from OSIRIS. The OSIRIS database, which is maintained by Bureau van Dijk Electronic Publishing, provides the most comprehensive coverage of publicly traded firm data in terms of the number of companies, countries, and years available.[7] From this sample, we drop countries with one-party systems (e.g., China) and countries in which the chief executive is a monarch (e.g., Saudi Arabia). We omit from the analysis countries with fewer than 10 firm-year observations as well as firms that belong to the financial industry or utilities. Our final sample comprises 47,808 firms from 79 countries for the period 1980 through 2006, for a total of 214,046 of firm-year observations. We note that the sample of firms is unbalanced, with more countries and companies covered in later years.

Table I presents descriptive statistics. In particular, the table reports for each sample county the total number of firms and firm-year observations, the type of political system (presidential,

[7] For example, a commonly used source of firm data in the international finance research, Worldscope, covers around 30,000 firms across 49 countries during years from 1990 through 2006. On the other hand, OSIRIS contains 60,000 companies across 85 countries from 1980 through 2006. To verify that our results are not sensitive to the choice of database, we replicate the study using the sample of firms from Worldscope and obtain qualitatively similar results.

parliamentary, or assembly-elected president), the total number of elections, the average electoral margin (a measure of election outcome uncertainty), and average firm investment, value, and cash flow.[8] The number of firms ranges from 8,701 for the U.S. to 6 for Nicaragua.[9] Turning to political systems, thirty-two countries have a parliamentary system, while twenty-eight have a presidential (or assembly-elected presidential) system. The remaining nineteen countries are classified as having mixed systems because their system changes over the sample period.

The sample captures, on average, six election cycles. Some elections are won with a narrower margin than others. This is evident from the sixth column of Table I. For example, during the sample period, elections in Bangladesh were closely contested (the average electoral margin is 2%), while in Kenya elections were won with a large difference in votes (the margin is 98%).

The last three columns of Table I provide summary statistics for our main firm variables: investment, value, and cash flow. These variables are winsorized at the 1% and 99% levels to reduce the impact of outliers. We define and discuss them in the next section.

[8] The political system is classified as presidential when (i) the chief executive is not elected; or (ii) presidents are elected directly or by an electoral college in the event there is no prime minister. In systems with both a prime minister and a president, exact classification depends on the veto power of the president and the power of the president to appoint a prime minister and dissolve parliament. Systems in which the legislature elects the chief executive are classified as parliamentary. Systems are classified as assembly-elected presidential if the assembly cannot easily recall the chief executive. See Beck et al. (2001) for more details on the classification of political systems. Election year is the year of presidential election for presidential or assembly-elected presidential systems and of parliamentary elections for parliamentary systems. If there was a change in a country's political system during the sample period, then the country is classified as "mixed." Election margins come from the World Bank's Database of Political Institutions, and are defined as the difference between the vote share of the largest government party and the vote share of the largest opposition party.

[9] As a robustness check, we confirm that our results are not driven by countries with large number of observations: U.S., Japan, and U.K.

B. Regression Specifications

To compute investment-to-price sensitivity we run two types of regressions. First, for some of our analyses below, we need to calculate the sensitivity for each country separately. We therefore run the following baseline regression as described in Chen et al. (2007):

$$\begin{aligned} I_{i,t} = {} & \eta_i + \beta_1 \cdot ELECTION_t + \beta_2 \cdot Q_{i,t-1} + \beta_3 \cdot ELECTION_t \times Q_{i,t-1} + \gamma_1 \cdot CF_{i,t} \\ & + \gamma_2 \cdot ELECTION_t \times CF_{i,t} + \lambda_1 \cdot \Delta S_{i,t-1} + \lambda_2 \cdot ELECTION_t \times \Delta S_{i,t-1} + \varphi_1 \cdot (1/A_{i,t}) \\ & + \varphi_2 \cdot R_{i,t+1} + \varepsilon_{i,t}, \end{aligned} \qquad (1)$$

where *i* indexes firms, *t* years, and η_i firm fixed effects.[10] As suggested in Petersen (2009), we adjust the regression's standard errors for heteroskedasticity, serial correlation, and cross-sectional correlation using two-way clustering at the firm and year levels.[11]

Investment, *I*, is defined as the sum of capital expenditures and R&D expenses scaled by total assets.[12] Our primary explanatory variables are *ELECTION*, a dummy variable that takes the value of one for election years and zero otherwise, and firm value, *Q*, calculated as the sum of market value of equity and total assets less book value of equity, scaled by total assets.[13] The coefficient β_2 measures investment-to-price sensitivity during non-election years (*ELECTION* = 0). The main variable of interest is the interaction between the election dummy variable and firm value, *ELECTION* × *Q*. If elections reduce investment-to-price sensitivity, we expect the

[10] Time fixed effects are not included because there is no cross-sectional variation in the election dummy variable.
[11] Erickson and Whited (2000) show that the estimated coefficients of firm investment on Q can be biased because firm Q is measured with errors. We return to this issue in Section V and verify that our results are not driven by the errors-in-variables problem.
[12] In regression (1), investment is measured in the election year. It is possible, however, that political uncertainty persists several years after an election takes place. In untabulated tests we confirm that the results remain unchanged if investment is measured one or two years after the election year.
[13] As an alternative measure to firm value, we use stock returns as in Mork et al. (1990) and Bushman et al. (2007). See Section V for more details.

coefficient β_3 to be significantly less than zero. The magnitude of $\beta_2 + \beta_3$ gives the value of investment-to-price sensitivity during election years.

Julio and Yook (2009) document that companies spend less on capital expenditures during election years. The regression therefore includes *ELECTION* to control for the investment-reducing effect of elections. We also control for cash flow, *CF*, the sum of net income and depreciation and amortization expenses over total assets, because the effect of cash on investment is known to be an indicator of a firm's financial constraints or future profitability. We include the interaction between cash flow and the election dummy variable, *ELECTION* × *CF*, to examine whether the impact of cash flow on investment changes during election years. In addition, one over total assets, *1/A*, is included because both investment and firm value have a common scaling factor. We control for the one-year-ahead abnormal stock return (calculated relative to the CRSP market index), *R*, because, according to Baker et al. (2003), investment increases when equity is overvalued, and *R* can capture company overvaluation due to speculative bubbles.[14]

Finally, we control for growth in sales, ΔS, and its interaction with the election dummy variable, *ELECTION* × ΔS, because, when market uncertainty is large, managers are more likely to extract information from fundamentals. Note that firm value and growth in sales in (1) are lagged by one year with respect to firm investment to reduce endogeneity concerns due to mutual causality between these variables.

[14] The abnormal stock return also controls for the effect of mispricing on investment (see Bakke and Whited (2009)). Our results do not change if we use discretionary accruals as an alternative proxy for mispricing as in Polk and Sapienza (2009).

Other analyses below require a pool of firm data from every country. For these tests we run a regression augmented by country characteristics:

$$
\begin{aligned}
I_{i,t}^{c} = {} & \eta_i + \eta_t + \beta_1 \cdot ELECTION_t^c + \beta_2 \cdot Q_{i,t-1}^c + \beta_3 \cdot ELECTION_t^c \times Q_{i,t-1}^c + \gamma_1 \cdot CF_{i,t}^c \\
& + \gamma_2 \cdot ELECTION_t^c \times CF_{i,t}^c + \lambda_1 \cdot \Delta S_{i,t-1}^c + \lambda_2 \cdot ELECTION_t^c \times \Delta S_{i,t-1}^c \\
& + \varphi_1 \cdot (1/A_{i,t}^c) + \varphi_2 \cdot R_{i,t+1}^c + \varphi_3 \cdot \Delta GDP_{t-1}^c + \varphi_4 \cdot FD_{t-1}^c + \varphi_5 \cdot LAW_{t-1}^c + \varphi_6 \cdot PROPERTY_{t-1}^c \\
& + \varphi_7 \cdot V(\Delta GDP_{t-1}^c) + \varphi_8 \cdot V(ER_{t-1}^c) + \varphi_9 \cdot V(INFLATION_{t-1}^c) + \varepsilon_{i,t},
\end{aligned}
\tag{2}
$$

Regression (2) includes both firm fixed effects, η_i, and year fixed effects, η_t. Country fixed effects are not entered because firm fixed effects are already present in (2). As before, the standard errors in (2) are adjusted using two-way clustering (by firm and by year). The difference between regressions (1) and (2) is that, in (2), we include country controls that capture variation in investment due to economic development, institutional development, and macroeconomic factors.[15] In particular, real GDP growth, ΔGDP, and financial development, *FD*, which is the sum of stock market capitalization and private credit relative to GDP, enter regression (2) because companies tend to invest more in economically and financially developed markets.[16] At the same time, according to Giannetti and Yu (2010), incentives to acquire information depends on the stage of economic development. Investment is also expected to be larger in countries with stronger legal environment and better enforcement of property rights. We therefore include the rule of law, *LAW*, which is an assessment of the strength of a country's tradition of law and order, and the property rights protection index,

[15] In (2), abnormal return *R* is in U.S. dollars and it is measured relative to a country's Morgan Stanley Capital Market Index.
[16] These variables are constructed from the World Bank's World Development Indicators database.

PROPERTY, as controls. These variables come from the International Country Risk Guide (ICRG) and Economist Intelligence Unit (EIU), respectively. Finally, because macroeconomic volatility can reduce investment and, at the same time, deterioration in macroeconomic situation can trigger elections, we include several variance measures as controls, namely, the standard deviation of real GDP per capita, *V(ΔGDP)*; the standard deviation of the real exchange rate, *V(ER)*; and the standard deviation of the inflation rate, *V(INFLATION)*. These variation measures are constructed using a ten-year rolling window.[17]

IV. Results

The following subsections report the results on six sets of tests. In Subsections A and B, we show that investment-to-price sensitivity is lower during election years for samples of U.S. and international firms, respectively. Next, in Subsection C, we examine how variation in the degree of uncertainty surrounding election outcomes and future policy changes impacts this sensitivity. Subsection D looks at the effect of elections on the informativeness of stock prices and information asymmetry. Finally, in Subsections E and F, we link elections-induced drop in investment-to-price sensitivity to country characteristics and company performance, respectively.

A. Impact of Elections on Investment-to-Price Sensitivity: U.S. Sample

[17] We do not control for time-invariant country variables such as investor protection and the quality of accounting standards because, when entered together, firm fixed effects and time-invariant measures become perfectly collinear. However, all of the results remain unchanged if we exclude firm effects and instead control for investor protection and the quality of accounting standards.

Table II presents the results for different specifications of regression (1) using the sample of U.S. firms covered in CRSP/COMPUSTAT. By considering firms from a single country, we ensure that the observed results are not driven by omitted country characteristics. The U.S. sample contains 62,418 firm-year observations, covers the 1964 through 2006 period, and includes eleven national elections.[18]

In the first specification of the model, we estimate the simple relation between investment and firm value. Specifically, in specification 1, we regress investment (expressed in percentages) on firm value and cash flow. Consistent with prior literature, both firm value and cash flow are strongly positively related to investment. Next, in specification 2, we add the election dummy variable. Its coefficient is negative but marginally significant (*p-value* = 0.06).[19] Based on the coefficient's magnitude, elections in the U.S. reduce investment by 0.21%, which is a rather small amount compared to the average value of investment of 8.7%.[20] This effect remains small across all of the specifications, ranging from –0.01% (specification 5) to – 0.28% (specification 3).

Our main prediction, that investment-to-price sensitivity is lower during election years, is tested in specification 3, where the election dummy variable is interacted with firm value. The coefficient on the interaction term is negative ($\beta_3 = -0.34$) and highly significant (*p-value* = 0.00), indicating that investment is less responsive to stock prices during election years. The reduction in investment-to-price sensitivity is also economically large. To see this, consider

[18] As we discuss below, the sample of international firms (Subsection B) starts in 1980.
[19] This result is consistent with Julio and Yook (2009), who, using a sample of international companies, document a decrease in capital spending during election years.
[20] The average value of investment for U.S. companies is different from the number reported in Table I because the sample period in Table I is limited to the 1980 through 2006 period.

first non-election years (*ELECTION* = 0). In this case the coefficient on firm value is $\beta_2 = 1.57$. This implies that a one-standard deviation increase in firm value (1.42) is associated with an increase in investment of $1.57 \times 1.42 = 2.23$, which is a 26% increase in investment relative the average investment of 8.7%. However, the increase in investment-to-price sensitivity is much smaller during election years. The coefficient on the interaction between firm value and the election dummy is $\beta_3 = -0.34$, and thus investment-to-price sensitivity during election years is equal to $\beta_2 + \beta_3 = 1.57 - 0.34 = 1.23$. This implies that, during election years, a one-standard deviation increase in firm value increases investment by $(1.57 - 0.34) \times 1.42 = 1.75$, which is 22% (0.34 / 1.57) lower than the investment increase for non-election years. These results are illustrated in Fig. 1, which plots the sensitivities separately for election and non-election years.

In specification 4, we include the interaction between the election dummy variable and cash flow. We find that investment sensitivity to cash flow increases during election years: the coefficient γ_2 on the interaction between cash flow and the election dummy is positive, albeit marginally significant (*p-value* = 0.10). Thus, in election years, U.S. companies appear to rely more on cash flow than on information contained in stock prices. As discussed earlier, this may be due to firms facing greater financial constraints during election periods (Fazzari et al. (1998, 2000)) or to cash flow containing better information about investment opportunities during election periods (Kaplan and Zingales (1997, 2001), Gomes (2001), Alti (2003)).

Our last specification, specification 5, adds past growth in sales and its interaction with the election dummy to control for changes in company fundamentals. The coefficients on firm value and its interaction with the election dummy are now slightly lower ($\beta_2 = 1.51$ and $\beta_3 = -0.31$), but they remain highly significant (*p-value* = 0.00 for both coefficients). Another notable

result is that elections themselves do not appear to have a significant impact on investment after changes in company fundamentals are taken into account: the coefficient on *ELECTION* is now insignificant. With regard to growth in sales, companies with higher sales growth invest more, but the interaction between sales growth and the election dummy is insignificant.

Overall, we find strong evidence that, for our sample of U.S. firms, elections are associated with a decrease in investment-to-price sensitivity. We now turn our attention to an international sample.

B. Impact of Elections on Investment-to-Price Sensitivity: International Sample

Table III presents the results for several specifications of regression (2) using a sample of international firms. Our panel sample contains 214,046 firm-year observations and 466 elections from 79 countries over the 1980 through 2006 period.[21] The specifications we analyze are similar to those in Table II but the regressions now include year fixed effects and country characteristics.

The results in specification 1 are generally similar to those observed for the U.S. sample, with both firm value and cash flow strongly related to investment. In contrast with the U.S. results, however, in specification 2 elections appear to reduce investment by an economically meaningful amount: the coefficient on *ELECTION* equals –0.46 (*p-value* = 0.05).

Specification 3 shows that compared to the U.S. sample, the impact of elections on investment-to-price sensitivity is much larger for the international sample of companies. Again, consider first non-election years. In this case investment-to-price sensitivity is equal to β_2 =

[21] For consistency across countries in this analysis, here the U.S. data are taken as of 1980. The results do not change if the sample of U.S. firms starts from 1964 as in the previous subsection.

1.03, that is, a one-standard deviation change in *Q* in the international sample (1.56) raises investment by 1.56 × 1.03 = 1.61, which is a 32% increase over average investment of 5.1% (see Table I). However, the coefficient on the interaction between *Q* and *ELECTION* is $\beta_3 = -0.41$, and thus investment-to-price sensitivity is 40% (0.41/1.03) lower during election years as compared to non-election years. This implies that a one-standard deviation increase in *Q* raises investment by only 1.56 × (1.03-0.41) = 0.97, which amounts to 19% of the 5.1% average investment. These results are also depicted in Fig. 1.

When we include the interaction between the election dummy and cash flow (specification 4), the result is revealing. For the international sample of firms, we find that cash flow is strongly related to investment during election years ($\gamma_1 = 4.52$, *p-value* = 0.00), and that this effect is even larger during election years ($\gamma_2 = 4.68$, *p-value* = 0.00). Therefore, political uncertainty surrounding elections not only makes investment less dependent on stock prices, but also more dependent on cash flow. We can think of two ways to interpret this result. According to the financial constraints literature, outside financing is harder to secure during elections, in which case managers have to rely more on cash for investment. Alternatively, if elections make stock prices noisier, managers are more likely to rely on fundamentals, such as cash flow, in making investment decisions. This latter interpretation would be consistent with Alti (2005), who argues that investment may be correlated with cash because cash provides information on firm profitability that is incremental to the information contained stock prices.

We find further support for the argument of Alti (2005) in specification 5, where the interaction between the election dummy and growth in sales is positive and significant (*p-value*

= 0.01). Thus, during election years, investment appears to be more strongly related to fundamentals and less to stock prices.[22]

We note that the U.S., Japan, and U.K. have a disproportionate number of observations in our sample; specifically, they together account for 37% of our sample. To see whether our results in Table III are driven by these countries, we run specification 4 of Table III after dropping firms from the U.S., U.K., and Japan.[23] The results are reported in Table IV. We find no noticeable change in the magnitude or significance of the coefficients - the interaction between the election dummy and firm value remains negative and significant.

C. Degree of Election Uncertainty and Investment-to-Price Sensitivity

If election outcomes and subsequent policy changes are easy to predict, there should be no noticeable decrease in investment-to-price sensitivity in election years. In contrast, greater electoral uncertainty is likely to result in a larger drop in investment-to-price sensitivity in election years. We test this conjecture by augmenting regression (2) with the interaction between electoral uncertainty (*UNCERT*) and firm value.[24]

We employ two measures of electoral uncertainty in this test. According to Julio and Yook (2009) and Durnev et al. (2009), elections that are won with a small margin (closely contested elections) are associated with greater uncertainty among market participants. Our first proxy is thus electoral margin, defined as the difference between the vote share of the largest government party and the vote share of the largest opposition party (these shares come from

[22] The coefficients on the country control variables are intuitive. Firms in more economically developed countries with better law enforcement invest more, whereas macro volatility reduces investment.
[23] We do not report control variables for brevity.
[24] Since the proxies for uncertainty take values of 0 during non-election periods, we do not need to form triple interaction terms of elections dummy, uncertainty measure, and firm value.

the World Bank's Database of Political Institutions). Larger values of electoral margin indicate less electoral uncertainty. As a second measure, we use a more general political risk index that comes from the International Country Risk Guide (ICRG). The index consists of multiple categories, such as government stability, socioeconomic conditions, investment risk, risk of internal conflict, risk of external conflict, degree of corruption, influence of the military in politics, religious tensions, ethnic tensions, democratic accountability, and quality of bureaucracy. The index ranges from 0 to 100. Again, larger values indicate less political risk.[25]

Table V presents the estimation results. Electoral margin is used in specifications 1 and 2, and the political risk index is used in specifications 3 and 4. Specifications 2 and 4 include the interaction between cash flow and the election dummy. We find that independent of how electoral uncertainty is measured (electoral margin or political risk index), the interaction between electoral uncertainty and firm value is positive and significant (both with and without the cash flow-election dummy interaction). Thus, closely contested elections, that is, elections that are won with a smaller margin as well as elections associated with greater political risk, result in lower investment-to-price sensitivity.

To gauge economic significance of this result, consider two countries located in Europe and with similar levels of economic development: Austria and Denmark. According to the sixth column of Table I, elections in Denmark are won, on average with a margin of 10%, whereas elections are easier to predict in Austria, where the average electoral margin is 27%. According to specification 1, a one-standard deviation increase in Q (1.56) raises investment in Austria by $(1.56) \times (0.880 + 0.013 \times 27) = 1.92$. This increase in investment is 18% larger than

[25] We consider an alternative proxy, government fractionalization, in the sensitivity analysis section (Section V) below.

that for Denmark, which observes an increase of (1.56) × (0.880 + 0.013 × 10) = 1.58. We therefore conclude that more uncertain elections decrease the link between investment and stock prices.

Notice that when we include the interaction between electoral uncertainty and firm cash flow (specifications 2 and 4), the observed coefficients on *UNCERT* × *CASH* are negative and significant in both specifications. This confirms the previous result that during periods of increased electoral uncertainty, managers pay more attention to cash flow.

D. Impact of Elections on Stock Price Informativeness and Information Asymmetry

According to the information view of investment, managers pay less attention to financial markets during election years because stock prices become less informative and/or because managers become more informed relative to other market participants. We test this explanation directly by relating measures of stock price informativeness and information asymmetry to election cycles. To construct relevant proxies, we build on prior research that investigates the amount of private information in stock prices as well as the degree of information asymmetry between insiders and outsiders.

A suitable proxy for the amount of firm-specific information contained in stock prices is developed by Morck et al. (2000) and used in both Durnev et al. (2004) and Chen et al. (2007). Morck et al. (2000) claim that if a firm's stock return is highly correlated with the market return, then the firm's stock price is less likely to contain firm-specific information, whereas if the firm's stock return moves asynchronously with the market return, more firm-specific information is likely to be impounded into the stock's price. Chen et al. (2007) show further

that firms whose stocks contain more firm-specific information have larger investment-to-price sensitivities. Thus, following this literature, our measure of firm-specific information is given by the logarithmic transformation of the coefficient of determination $\left(\ln\left(R_{i,t}^{2,}/(1-R_{i,t}^{2,})\right)\right)$ of the following time-series regression, run for every firm and year using weekly return data:

$$r_{i,w} = \alpha_i + \beta_{1,i} r_{c,w} + \beta_{2,i} r_{US,w} + \varepsilon_{i,w}. \quad (3)$$

In equation (3), $r_{i,w}$ is the weekly return of firm *i*, $r_{c,w}$ is the value-weighted market return of country *c*, and $r_{US,w}$ is value-weighted market return of the U.S. Return data come from the Datastream database, and are expressed in U.S. dollars. Larger values of the log transformation of the coefficient of determination indicate *less* firm-specific information in stock prices.[26] Because of data limitations (return data are available as of 1995) the sample for this variable is reduced to 32,981 firm-years from 49 countries spanning the years 1995 through 2006.

To capture the degree of information asymmetry between managers and investors, we follow Llorente et al. (2002), who show that higher information asymmetry between different groups of traders is likely to result in returns being positively autocorrelated (conditional on trading volume). This is a simple and intuitive proxy that requires only return and trading volume data, and thus can be calculated for international companies. Specifically, we measure

[26] It is worth noting that a more direct measure of private information, probability of informed trading (PIN), requires high-frequency data which are not available for international companies. We run additional tests using our sample of U.S. firms with PIN as the dependent variable in the sensitivity analysis section.

information asymmetry as the coefficient C_2 in the following time-series regression, which is run using weekly return and trading volume data for every company and year:

$$r_{i,w} = A_i + C_{1,i} r_{i,w} + C_{2,i} r_{i,w} V_{i,w} + \lambda_{i,w} \ . \tag{4}$$

In (4), weekly returns, $r_{w,t}$, and trading volume (calculated as a de-trended series), $V_{w,i}$, are taken from Datastream. Larger values for the coefficient C_2 indicate greater information asymmetry.[27] This variable is available for 26,279 firm-years from 49 countries spanning the years 1995 through 2006. The proposed variable is not a perfect measure of information asymmetry between managers and investors; rather, it captures the asymmetry between more informed and less informed traders. Our results therefore rest on the assumption that information asymmetry between managers and investors is similar to that between more informed traders and less informed traders.

As an alternative measure of managerial information advantage we use earnings surprises as in Chen et al. (2007). It is often argued that managers possess better information about earnings than outside investors before earnings numbers are released to the public. In this case, firm stock returns are likely to react on the days when earnings are announced with the magnitude of abnormal reaction being larger if information asymmetry is higher. To construct this measure, for every firm and year, we use the I/B/E/S database to find dates of quarterly

[27] There is convincing evidence that the measure we use (the coefficient C_2) is related to other measures of information asymmetry. Llorente et al. (2002) show that C_2 is positive (negative) for companies that are more (less) likely to suffer from information asymmetry – firms with high (low) bid-ask spread, small (large) size, and/or with fewer (more) analyst following. Grishchenko et al. (2006) verify that, on average, C_2 is larger for firms that are located in countries where information asymmetry problems are more severe, such as countries with poor disclosure requirements or countries that have weak corporate governance. Gagnon et al. (2009) confirm that C_2 is smaller for firms in more transparent stock markets.

earnings announcements.[28] Then earnings surprises are calculated as annual average absolute values (over four quarterly earnings announcements) of abnormal stock returns relative to local stock market indexes for the [-1+1] announcement periods. Larger values of earnings surprises reflect better informed managers as compared to outside investors. Due to various data limitations, this proxy can be constructed for a fraction of our international sample. Specifically the sample shrinks to 8,617 firm-years across 43 countries during years from 2000 through 2006.

To test whether firm-specific information and information asymmetry are consistently different across election and non-election years using the following panel regression:

$$INF_{i,t}^{c} = \eta_i + \alpha \cdot trend + \beta_1 \cdot ELECTION_t^{c} + \beta_2 \cdot SIZE_{i,t-1}^{c} + \beta_3 \cdot \Delta S_{i,t-1}^{c} + \beta_4 \cdot FIN\_NEED_{j,t-1}^{c} + \beta_5 \cdot LEV_{i,t-1}^{c} + \varphi_1 \cdot GDP_{t-1}^{c} + \varphi_2 \cdot FD_{t-1}^{c} + \varphi_3 \cdot LAW_{t-1}^{c} + \varphi_4 \cdot PROPERTY_{t-1}^{c} + \varepsilon_{i,t}, \quad (5)$$

where η_i are firm fixed effects, and *trend* captures a time trend.[29] The dependent variable, *INF* (information), is either the log transformation of R^2, or the coefficient C_2, or earnings surprises as defined above. In (5), we include controls shown to affect the quality and distribution of information (see, e.g., Durnev et al. (2004) and Jin and Myers (2006)), namely: *SIZE*, firm size (log of total assets); ΔS, firm sales growth; *FIN_NEED*, industry financial need (industry median value of capital expenditures minus cash flows from operations divided by capital

[28] These dates are cross checked with earnings announcement dates reported in Bloomberg.

[29] Time trend is included because the amount of firm-specific information is presumably larger and information asymmetry is lower during later periods because of better developed and more globalized financial markets. For example, Campbell et al. (2001) find that the market R^2 has a negative trend indicating greater firm-specific return variation.

expenditures); *LEV*, firm leverage (long-term debt over beginning-of-year total assets); *GDP*, real GDP per capita; *FD*, financial development; *LAW*, rule of law; and *PROPERTY*, an index of property rights protection.[30]

Estimation results are presented in Table VI. In specification 1, the dependent variable is the log transformation of R^2. The coefficient on *ELECTION* is positive and significant. This is consistent with the notion that less firm-specific information enters stock prices during election years, making returns more correlated with the market indexes during such periods. The coefficient on *trend* is negative and significant, indicating that the market R^2 decreases over time. With regard to the control variables, stocks in more economically and financially developed countries as well as in countries with better law enforcement and property rights protection incorporate more firm-specific information. The above results suggest that, during election years, stock prices incorporate less firm-specific information which can be a possible explanation for why investment is less responsive to prices during election years.

In specification 2 the dependent variable is return autocorrelation, our measure of information asymmetry. The coefficient on the election dummy variable is positive, albeit marginally significant (*p-value* = 0.09). A similar result is observed in specification 3 with earnings surprises as the dependent variable. Election dummy is positive with *p-value* equal to 0.10. The above results suggest that, during election years, while stock prices incorporate less firm-specific information, they are not associated with a significant increase in information asymmetry. Thus, for our sample firms it appears that managers pay less attention to stock

[30] Our results do not change if we measure the dependent variable one or two years after the election year to account for information incorporation delay.

prices not because they become more informed relative to outside investors but rather because stocks become less informative.

E. Variation of Investment-to-Price Sensitivity across Countries

We test the political view of investment by calculating investment-to-price sensitivity for every country and exploring its variation across countries with different economic and institutional characteristics. Controlling for economic factors, we expect to observe a greater decrease in investment-to-price sensitivity during election years in countries with heavy state presence, and in countries where managers and politicians are less accountable.

First, for every country, we run specification 3 from Table II (i.e., using regression (1)) on country-specific panels of data to calculate county-level estimates of β_2 and β_3; as before, $\hat{\beta}_2$ measures investment-to-price sensitivity during non-election periods, $\hat{\beta}_3$ measures the change in sensitivity due to elections, and $\hat{\beta}_2 + \hat{\beta}_3$ measures investment-to-price sensitivity during election periods. Table VII reports the results for $\hat{\beta}_2$, $\hat{\beta}_3$, and $\hat{\beta}_2 + \hat{\beta}_3$ in columns two through four, respectively. The coefficients significant at the 10% level are in boldface. To measure the relative impact of elections, the last column of Table VII shows the ratio $\hat{\beta}_3 / \hat{\beta}_2$, expressed in percentages. Some interesting patterns emerge in Table VII. Out of the 63 countries analyzed, more than two-thirds (49) exhibit a drop in investment-to-price sensitivity during election years (negative values in the second columns, "Q-election dummy"),[31] and the drop is significant at the 10% level for twenty-six of them. The five countries with the greatest

[31] There are fewer countries in Table VII than in earlier tests because we cannot run country-specific regressions for countries with few observations.

relative drop in sensitivity (column five, "differential investment-to-price sensitivity") are Peru, Paraguay, South Korea, Turkey, and Jamaica. Therefore, we observe that investment-to-price sensitivity is lower in election periods for individual countries and not only for the aggregate sample of firms.

Next, to determine whether the drop in investment-to-price sensitivity can be explained by country characteristics reflecting a country's level of economic development, institutional development, state ownership, and politician accountability, we perform a series of "horse-race" regressions. Specifically, we run cross-country regressions where the relative decrease in investment-to-price sensitivity, $\hat{\beta}_3 / \hat{\beta}_2$, is regressed on a set of country characteristics. These characteristics include: *CORRUPT*, the corruption index from Transparency International, which measures the extent to which corruption is perceived to exist in the public and political sectors; *POL_DISCL*, the measure of public disclosure by politicians from Djankov et al. (2009)[32]; *STATE*, the index of the prevalence of state ownership and control from EIU; *MEDIA*, the media freedom index from Journalists without Borders, which assesses the extent of press freedom in a country based on violations directly affecting journalists and news media; *IP*, an updated investor protection (anti-director) index from Djankov et al. (2008); *LAW*, rule of law ; *GDP*, log of real GDP per capita; and FD, financial development.[33]

The cross-country estimation results are presented in Table VIII. Specification 1 provides a baseline using GDP and financial development as the independent variables. We find that the

[32] This variable is equal to one if filings on financial and business interests by Members of Parliament can be accessed publicly, to 0.5 if only one of the two types of filings (financial interests or business interests) is publicly available, and zero otherwise.

[33] Larger values for *CORRUPTION*, *POL_DISCL*, *MEDIA*, *STATE*, *IP*, and *LAW* indicate less corruption, better political disclosure, freer media, less state ownership, better investor protection, and better laws, respectively. All of the independent variables are calculated as average values over the time period when the relative decrease in investment-to-price sensitivity is estimated.

drop in investment-to-price sensitivity is larger in more developed countries as measured by GDP per capita. After controlling for GDP, financial development has no impact on the drop in sensitivity. The other explanatory variables listed above enter sequentially in specifications 2 through 7. Controlling for GDP and financial development, we find that out of the remaining six variables considered (corruption, political disclosure, state ownership, media freedom, investor protection, and rule of law), three variables explain the drop in sensitivity: the level of corruption (*p-value* = 0.00), the strength of disclosure standards for politicians (*p-value* = 0.00), and the extent of state ownership (*p-value* = 0.05). Interestingly, media freedom, investor protection, and quality of laws do not contribute to the variation in the sensitivity decrease once economic factors are taken into account. When all parameters are included together (specification 8), corruption and disclosure by politicians remain significant (*p-value* = 0.03 and 0.01, respectively), while state ownership becomes marginally significant (*p-value* = 0.10).[34]

In sum, we find that the decrease in investment-to-price sensitivity during election years varies across countries. Further, the political view of investment is more likely to hold for countries with larger state ownership, more corruption or where politicians are not required to publicly disclose their business interests – countries where elections have a larger impact on investment-to-price sensitivity. A possible interpretation of this result is that if managers can bribe politicians or otherwise gain privileged access to information or state financing during election years, the stock market becomes of little relevance to investment decisions.

[34] The regression in specification 8 suffers from collinearity problem because all of the independent variables are highly correlated. Nevertheless, it is still interesting to examine which parameters explain variation in the drop in investment-to-price sensitivity when they enter together.

F. Implications for Capital Allocation and Firm Performance

Our last series of tests links the election-induced drop in investment-to-price sensitivity to subsequent company performance. If lower investment-to-price sensitivity is associated with inferior capital allocation, firm performance is expected to suffer.

To test this conjecture we apply a two-stage procedure. First, we identify companies that experience an abnormal decrease in investment during election years. For these purposes, we run country-specific regressions as in Table VII but without the interaction between firm value and the election dummy variable, and we collect the regression residuals for every company and election year. Negative residual values indicate companies whose investment becomes less related to firm value during election years. Then, using these residuals, we form the dummy variable *DECREASE*, which is equal to one for company-election observations with negative residuals, and zero otherwise. Second, we regress company performance on *DECREASE* and a set of controls: R&D expenditures scaled by total assets, log of total assets, and long-term debt over total assets at the firm level, and real GDP per capita, financial development, and rule of law at the country level. If the drop in investment-to-price sensitivity decreases company performance, we expect the coefficient on *DECREASE* to be negative.

The results are reported in Table IX. Firm performance is measured by return on assets, ROA, in specifications 1 and 2 and by sales growth in specifications 3 and 4. ROA and sales growth are calculated as average values over the three years following an election. Specifications 1 and 3 do not include the firm and country controls, whereas specifications 2

and 4 do. In all of the regressions, we control for firm and election fixed effects. Standard errors are calculated using a two-dimensional clustering method.

Focusing on ROA, in the regression omitting the control variables the coefficient on *DECREASE* is equal to –4.07, which amounts to a 4% drop in ROA. This is a large deterioration in performance given that the sample average ROA is 10%. The coefficient remains negative and significant when controls are included, with the coefficient now –3.94. A similar reduction in performance is observed when sales growth is considered: independent of whether the control variables are included or not, the coefficients on *DECREASE* are negative and highly significant. For instance, in specification 4, companies that experience a drop in investment-to-price sensitivity observe a 6.21% decrease in sales growth over the three years following an election. These results support our conjecture that political uncertainty can lead to a decrease in corporate performance.

V. Sensitivity Analysis

In this section, we perform a battery of checks to ascertain whether our results are biased by endogeneity of elections, measurement errors, or whether they are sensitive to the choice of proxies used. These tests generate results that are qualitatively similar to our main findings above, suggesting that our conclusions are robust to these concerns. We briefly discuss our various checks below.[35]

First, although in most cases elections follow pre-determined cycles, deterioration in economic performance, death of a political leader, and wars or revolutions may trigger early elections, making them endogenous. We tackle this issue by running Instrumental Variables

[35] The results in this section are not tabulated to save space; they are available from the authors upon request.

regressions with pre-determined election schedules as an instrument for the observed election cycles. To construct the election schedules, we hand-collect statistics on the length of time between elections for every country. A series of tests confirms that this instrument is relevant (not weak) and can be treated as exogenous. The results of these regressions indicate that our results remain unchanged, and in some instances even become stronger.

Because different accounting standards and financial statement consolidation rules can bias estimates of firm value, in our second robustness test, we follow Morck et al. (1990) and Smith et al. (2007) and use lagged stock returns instead of firm value in regressions (1) and (2). Our results continue to go through. Similarly, Erickson and Whited (2000) raise a concern that measurement errors in firm value can bias investment-to-price sensitivity. They propose to estimate the relationship between investment and Q using the measurement-error-consistent GMM method. This method decomposes Q into a components relevant for investment and a component irrelevant for investment. Following their GMM approach, we sort observations into election-years cohort and non-election-years cohort and compare investment-to-price sensitivity between the two cohorts. Our results do not seem to be biased by the errors-in-variables problem because the re-calculated investment-to-price sensitivity turns out to be significantly lower during election years.

Next, in the main analysis, we use firm-specific return variation to measure the amount of private information in stock prices. To test whether this design choice drives our results, we use an alternative measure, namely, the PIN (probability of informed trading) variable developed by Easley et al. (1997); large values of PIN indicate more private information. Unfortunately, this measure can be computed only for U.S. companies as it requires high-

frequency intraday data. For our sample of U.S. companies, the coefficient at the PIN variable is insignificant confirming the main results that managers pay less attention to stock prices not because information asymmetry is larger but because stock prices become less informative during elections.

Additional tests examine robustness to the choice of proxy for firm investment and election uncertainty. In particular, as alternatives measures of firm investment, we replace capital expenditures scaled by total assets with the percentage change in total assets. Similarly, as an alternative to electoral margin or political risk as a measure of election uncertainty, we use government fractionalization.[36] All of our results survive these changes.

Our next test takes into account the fact that, because firm data are organized by calendar year, a slight mismatch arises with respect to election timing. For example, firm observations that correspond to calendar year 2000 appear in the same time cohort for elections that are held in January of 2000 or December of 2000. To address this issue, we repeat our analyses organizing firm data by fiscal years that correspond to election months. Specifically, for an election in month n we take companies with financial statements filed during months $n - 6$ through $n + 5$. None of our results are affected by this change.

Finally, one may argue that a decrease in investment-to-price sensitivity can be explained by financing constraints alone. To test this argument, we first sort company-year observations according to the measure of financing constraints used in Baker et al. (2003) (this measure is

[36] Government fractionalization is defined as the probability that two deputies, picked at random among government members, are of different parties. This variable comes from the World Bank's Database of Political Institutions.

based on Kaplan and Zingales' (1997) five-variable KZ index).[37] We then re-run every regression for different quintiles of firms. The results show that the observed drop in investment-to-price sensitivity holds for every quintile. Hadlock and Pierce (2010) claim that firm size and age reflect financial constraints better than the original KZ index. Consequently, we confirm that the drop in investment-to-price sensitivity holds for subgroups of firms sorted according to size and age. Overall, we find no support for the argument that investment-to-price sensitivity changes are driven by financial constraints alone.

VI. Concluding Remarks

In a recent paper, Roe and Siegel (2009) argue that to date the finance literature has largely ignored the link between political factors and financial decision-making. Our paper is among the first to attempt to fill this gap. We argue that during periods of increased political uncertainty, stock prices play a limited role in guiding corporate investment decisions. Using national elections as our sample of politically uncertain events, we find that during election years, (i) investment is less sensitive to stock prices, (ii) the drop in investment-to-price sensitivity is larger when election outcomes are less certain, and (iii) the drop in investment-to-price sensitivity is associated with lower post-election company performance. We therefore conclude that politics has a real impact on corporate performance by altering how managers respond to stock prices when making investment decisions.

We propose two explanations for the above findings. According to the information view of investment, uncertainty about election outcomes and subsequent policy changes can reduce the

[37] This measure is calculated as a linear combination of cash flows, cash dividends, cash balances, and leverage. Larger values of the KZ index indicate more constrained firms. See Baker et al. (2003) for more details.

amount of information contained in stock prices, making stock prices noisier signals for managers to follow. Consistent with this view, we find that during election years, the amount of firm-specific information in stock prices is lower. The information view also suggests that managers would rely less on stock prices if they become relatively more informed than outside investors in the face of increased political uncertainty. We do not find evidence of increased information asymmetry in election years, and thus we conclude that during election years, managers pay less attention to stock prices not because they become more informed relative to outside investors but rather because stocks become less informative signals.

Our second explanation is the political view of investment. This view posits that during election years, investment may be less sensitive to stock prices if managers with political ties have access to privileged information or government financing. We find that, in line with this view, the drop in investment-to-price sensitivity is more pronounced in countries with high corruption, large state ownership, and weak public disclosure of politicians' business and financial interests.

In sum, we show that political uncertainty reduces investment-to-price sensitivity, the information content of stock prices, and company performance. These results have implications of practical importance for policymakers. In markets with high political uncertainty, particularly where politicians are easily influenced by corporate interests, the stock market becomes a "sideshow", and it is less able to guide capital to its best uses. This suggests that it may be important for policymakers to find mechanisms to reduce unnecessary political uncertainty resulting from such influences.

Finally, we recognize that there can be other channels through which political uncertainty translates into lower investment-to-price sensitivity. To differentiate between them, one can perform more refined tests by identifying firms and industries that are more sensitive to a particular channel. Moreover, while we tried to address endogeneity and errors-in-variables concerns, there can still remain econometric problems that can potentially bias our results. We leave these issues to our future research.

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Table I
Descriptive Statistics by Country: Political Systems, Elections, and Firm Variables.

This table presents descriptive statistics of country political system, number of elections, election margin, and main firm variables: investment (*I*), value (*Q*), and cash flow (*CF*). The sample of firms is from OSIRIS for years from 1980 through 2006. The variables are: "firms" is the number of firms in a country, "firm-years" is the number of firm-year observations in a country with non-missing data for main variables – firm investment, value, and cash flow. "Political system" is the type of the political system, "number of elections" is the number of elections of the chief executive during the sample years (1980-2006), "electoral margins" is the measure of elections uncertainty (it is defined as the difference between the vote share of the largest government party and the vote share of the largest opposition party). The type of a political system (presidential or parliamentary) and electoral margin are from the World Bank's 2006 Database of Political Institutions (Beck et. al (2001)). We cross-check the election data with data reported by *International Institute for Democracy and Electoral Assistance*, *Center on Democratic Performance*, *Journal of Democracy*, *Elections around the World*, *Election Guide*, and *The CIA World Factbook*. The political system is classified as presidential when (i) the chief executive is not elected; or (ii) presidents are elected directly or by an electoral college in the event there is no prime minister. In systems with both a prime minister and a president, exact classification depends on the veto power of the president and the power of the president to appoint a prime minister and dissolve parliament. Systems in which the legislature elects the chief executive are classified as parliamentary. Systems are classified as assembly-elected presidential if the assembly cannot easily recall the chief executive. See Beck et al. (2001) for more details on the classification of political systems. Election year is the year of presidential election for presidential or assembly-elected presidential systems and of parliamentary elections for parliamentary systems. If there was a change in a country's political system during the sample period, then the country is classified as "mixed." Firm variables are averages from 1980 through 2006 from OSIRIS. *I* (investment) is the sum of capital expenditures and R&D expenses scaled by total assets, *Q* (value) is firm value calculated as firm market value (stock price times the number of shares outstanding plus total assets less book value of equity) over total assets, *CF* (cash flow) is the sum of net income before extraordinary items and depreciation and amortization expenses over total assets. Firms that belong to financial industry or utilities are dropped. Investment, value, and cash flow variables are winsorized at the 1% and 99% levels.

country	firms	firm-years	political system	number of elections	electoral margin	I	Q	CF
ARGENTINA	234	1,063	presidential	5	27%	0.060	1.134	0.078
AUSTRALIA	2,133	7,260	parliamentary	10	4%	0.075	1.633	0.196
AUSTRIA	160	1,427	parliamentary	8	27%	0.047	1.282	0.115
BAHAMAS	12	39	parliamentary	5	12%	0.058	1.453	0.134
BANGLADESH	89	511	mixed	4	2%	0.045	0.933	0.057
BARBADOS	11	23	parliamentary	6	13%	0.053	1.314	0.138
BELGIUM	267	2,321	parliamentary	6	18%	0.055	1.224	0.143
BOLIVIA	23	24	presidential	6	25%	0.059	0.518	0.125
BOTSWANA	11	24	parliamentary	5	34%	0.045	0.843	0.057
BRAZIL	748	3,425	mixed	6	12%	0.040	1.088	0.099
BULGARIA	11	10	mixed	3	14%	0.048	1.140	0.084
CANADA	2,128	6,552	parliamentary	8	15%	0.074	1.693	0.137
CHILE	662	3,440	presidential	4	13%	0.057	1.307	0.067
COLOMBIA	224	851	presidential	7	49%	0.012	0.451	0.007
COSTA RICA	28	124	presidential	7	15%	0.057	1.147	0.050
CROATIA	12	54	presidential	3	8%	0.058	0.914	0.116
CYPRUS	13	22	presidential	5	30%	0.050	1.432	0.118
CZECH REPUBLIC	289	1,165	mixed	7	53%	0.061	0.919	0.067
DENMARK	239	2,238	parliamentary	9	10%	0.052	1.223	0.133
DOMINICAN REPUBLIC	11	26	presidential	7	31%	0.046	0.736	0.121
ECUADOR	64	189	presidential	6	28%	0.055	1.111	0.068
EGYPT	735	2,810	assembly-elected president	6	53%	0.056	1.406	0.088
EL SALVADOR	17	77	presidential	5	21%	0.057	0.985	0.057
ESTONIA	20	107	assembly-elected president	4	21%	0.040	1.413	0.062
FINLAND	194	1,823	parliamentary	6	12%	0.071	1.255	0.105
FRANCE	1,352	7,793	parliamentary	6	8%	0.040	1.334	0.131
GERMANY	1,173	6,409	parliamentary	8	7%	0.054	1.380	0.108
GREECE	294	1,879	mixed	8	6%	0.015	1.670	0.116
GUATEMALA	20	84	mixed	7	22%	0.059	0.348	0.077
HUNGARY	36	225	mixed	7	46%	0.074	1.090	0.109
ICELAND	26	107	parliamentary	6	23%	0.055	1.565	0.071
INDIA	2,700	10,067	parliamentary	7	10%	0.072	1.534	0.057
INDONESIA	316	1,791	assembly-elected president	6	42%	0.054	1.202	0.116
IRELAND	140	1,132	parliamentary	7	5%	0.056	1.518	0.123
ISRAEL	239	1,395	mixed	7	16%	0.050	1.342	0.221
ITALY	372	2,650	parliamentary	7	13%	0.031	1.102	0.114
JAMAICA	27	104	parliamentary	7	26%	0.044	0.840	0.063
JAPAN	6,639	19,886	parliamentary	9	13%	0.009	1.321	0.168
KAZAKHSTAN	7	14	presidential	3	66%	0.052	1.110	0.127
KENYA	8	44	presidential	5	98%	0.053	1.312	0.140
KOREA	2,340	9,945	mixed	5	19%	0.054	1.009	0.133
LATVIA	45	165	mixed	5	12%	0.048	1.411	0.130

LITHUANIA	42	173	presidential	4	12%	0.054	1.333	0.092
LUXEMBOURG	47	284	parliamentary	5	19%	0.053	1.210	0.143
MALAYSIA	1,154	6,641	parliamentary	6	15%	0.043	1.384	0.117
MAURITIUS	10	31	parliamentary	6	15%	0.044	1.502	0.146
MEXICO	276	1,730	presidential	6	25%	0.048	1.215	0.083
NETHERLANDS	340	3,265	parliamentary	10	14%	0.052	1.375	0.110
NEW ZEALAND	207	1,402	parliamentary	9	10%	0.045	1.428	0.062
NICARAGUA	6	12	presidential	5	21%	0.049	0.740	0.125
NIGERIA	14	44	presidential	3	13%	0.052	0.442	0.081
NORWAY	330	2,372	parliamentary	7	17%	0.086	1.313	0.152
PAKISTAN	389	1,756	mixed	3	8%	0.062	1.130	0.094
PANAMA	56	200	mixed	5	32%	0.045	1.123	0.108
PARAGUAY	54	171	presidential	6	21%	0.055	1.243	0.118
PERU	263	1,433	presidential	7	26%	0.046	1.001	0.079
PHILIPPINES	219	1,598	presidential	4	49%	0.040	1.247	0.110
POLAND	94	457	mixed	6	47%	0.073	1.250	0.074
PORTUGAL	119	706	mixed	9	16%	0.039	1.089	0.052
ROMANIA	7	26	mixed	7	49%	0.048	1.212	0.104
RUSSIAN FEDERATION	230	674	presidential	3	9%	0.043	0.873	0.068
SINGAPORE	681	5,983	parliamentary	6	41%	0.061	1.318	0.160
SLOVAKIA	15	91	parliamentary	4	11%	0.032	0.744	0.040
SLOVENIA	17	101	parliamentary	4	21%	0.044	0.814	0.085
SOUTH AFRICA	466	2,638	mixed	7	33%	0.049	1.503	0.114
SPAIN	313	2,175	parliamentary	7	11%	0.052	1.177	0.085
SRI LANKA	164	485	mixed	4	13%	0.044	1.029	0.084
SWEDEN	634	4,407	parliamentary	8	9%	0.074	1.413	0.155
SWITZERLAND	303	3,181	parliamentary	6	57%	0.027	1.303	0.146
TAIWAN	2,791	7,181	mixed	4	9%	0.053	1.259	0.153
THAILAND	540	4,073	parliamentary	7	20%	0.073	1.148	0.094
TRINIDAD AND TOBAGO	11	32	parliamentary	6	17%	0.047	0.559	0.132
TUNISIA	40	198	presidential	3	88%	0.044	1.123	0.107
TURKEY	135	612	mixed	5	20%	0.066	1.557	0.112
UKRAINE	11	24	presidential	3	31%	0.060	0.938	0.077
UNITED KINGDOM	4,988	16,123	parliamentary	6	13%	0.049	1.595	0.131
UNITED STATES OF AMERICA	8,701	44,217	presidential	7	7%	0.082	1.668	0.105
URUGUAY	25	52	presidential	5	40%	0.045	0.914	0.075
VENEZUELA	47	203	presidential	5	14%	0.034	0.807	0.090
total	47,808	214,046		466				
average	605	2,709		6	23%	0.051	1.172	0.105

Table II
Investment, Firm Value, and Cash Flow, Conditional on Elections: Panel Regressions using U.S. Sample.

This table reports the results of the following panel (firm-years) regressions run on the sample of U.S. firms from 1964 through 2006,

$$I_{i,t} = \eta_i + \beta_1 \cdot ELECTION_t + \beta_2 \cdot Q_{i,t-1} + \beta_3 \cdot ELECTION_t \times Q_{i,t-1} + \gamma_1 \cdot CF_{i,t} + \gamma_2 \cdot ELECTION_t \times CF_{i,t} + \lambda_1 \cdot \Delta S_{i,t-1} + \lambda_2 \cdot ELECTION_t \times \Delta S_{i,t-1} + \varphi_1 \cdot (1/A_{i,t}) + \varphi_2 \cdot R_{i,t+1} + \varepsilon_{i,t} \quad ,$$

where *i* indexes firms, *t* years, and η_i firm fixed effects. *I* is firm investment (expressed in %), *ELECTION* is a dummy variable that takes value of one during election years, and zero otherwise, *Q* is firm value, *ELECTION* × *Q* is the interaction term of election dummy variable with firm value, *CF* is firm cash flow, *ELECTION* × *CF* is the interaction of election dummy variable with firm cash flow, Δ*S* is growth rate in sales, *ELECTION* × Δ*S* is the interaction term of election dummy variable with firm growth rate in sales, 1/*A* is one over total assets, and *R* is future abnormal stock return. Numbers in parentheses are probability levels at which the hypothesis of zero coefficient can be rejected. Firms that belong to financial industry or utilities are dropped. The coefficients significant at the 10% level (based on a two-tailed test) or higher are in bold face. Standard errors are clustered by firms and years to adjust them for heteroskedasticity, cross-sectional, and time-series correlation. The eleven election years are: 1964, 1968, 1972, 1976, 1980, 1984, 1988, 1992, 1996, 2000, and 2004.

dependent variable		**investment, I**				
specification		**1**	**2**	**3**	**4**	**5**
value	Q	**2.271**	**2.198**	**1.570**	**1.798**	**1.511**
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
election dummy	ELECTION	-	**-0.214**	**-0.277**	**-0.126**	-0.013
			(0.06)	(0.01)	(0.10)	(0.25)
interaction of election dummy with value	ELECTION × Q	-	-	**-0.341**	**-0.441**	**-0.310**
				(0.00)	(0.00)	(0.00)
cash flow	CF	**7.382**	**5.317**	**5.038**	**4.317**	**4.027**
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
interaction of election dummy with cash flow	ELECTION × CF	-	-	-	**2.501**	1.334
					(0.10)	(0.15)
growth in sales	ΔSALES	-	-	-	-	**0.443**
						(0.00)
interaction of election dummy with growth in sales	ELECTION × ΔSALES	-	-	-	-	-0.013
						(0.62)
one over assets	1/A	**-1.505**	**-1.505**	**-2.553**	**-2.274**	**-2.760**
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
future abnormal return	R	-0.003	-0.004	-0.006	-0.003	0.002
		(0.44)	(0.44)	(0.30)	(0.60)	(0.68)
firm fixed effects		included	included	included	included	included
F-stat		**409.090**	**409.020**	**85.130**	**65.230**	**68.380**
R^2-adj		0.145	0.146	0.152	0.153	0.163
number of firm-year observations		62,418	62,418	62,418	62,418	53,833

Table III
Investment, Firm Value, and Cash Flow, Conditional on Elections: Panel Regressions using International Sample.

This table reports the results of the following panel (firm-country-years) regressions run on the sample of international companies from 1980 through 2006,

$$I^c_{i,t} = \eta_i + \eta_t + \beta_1 \cdot ELECTION^c_t + \beta_2 \cdot Q^c_{i,t-1} + \beta_3 \cdot ELECTION^c_t \times Q^c_{i,t-1} + \gamma_1 \cdot CF^c_{i,t} + \gamma_2 \cdot ELECTION^c_t \times CF^c_{i,t} + \lambda_1 \cdot \Delta S^c_{i,t-1}$$
$$+ \lambda_2 \cdot ELECTION^c_t \times \Delta S^c_{i,t-1} + \varphi_1 \cdot (1/A^c_{i,t}) + \varphi_2 \cdot R^c_{i,t+1} + \varphi_3 \cdot \Delta GDP^c_{t-1} + \varphi_4 \cdot FD^c_{t-1} + \varphi_5 \cdot LAW^c_{t-1} + \varphi_6 \cdot PROPERTY^c_{t-1} + \varphi_7 \cdot V(\Delta GDP^c_{t-1}) ,$$
$$+ \varphi_8 \cdot V(ER^c_{t-1}) + \varphi_9 \cdot V(INFLATION^c_{t-1}) + \varepsilon_{i,t}$$

where *i* indexes firms, *c* countries, and *t* years. Variables η_i and η_t are firm and year fixed effects. *I* is firm investment (expressed in %), *ELECTION* is a dummy variable that takes value of one during election years, and zero otherwise, *Q* is firm value, *ELECTION* × *Q* is the interaction term of election dummy variable with firm value, *CF* is cash flow, *ELECTION* × *CF* is the interaction term of election dummy variable with firm cash flow, *ΔS* is firm growth rate in sales, *ELECTION* × *ΔS* is the interaction term of election dummy variable with firm growth in sales, *1/A* is one over total assets, *R* is future abnormal stock return, *ΔGDP* is country growth rate in real GDP per capita, *FD* is country financial development (sum of stock market capitalization and private credit relative to GDP), *LAW* is country index rule of law from ICRG (assessment of the strength of a country's tradition of law and order), *PROPERTY* is country index of property rights protection from EIU, *V(ΔGDP)* is time-series standard deviation of real GDP per capita, *V(ER)* is time-series standard deviation of real exchange rate, and *V(INFLATION)* is time-series standard deviation of inflation rate. Firms that belong to financial industry or utilities are dropped. Numbers in parentheses are probability levels at which the hypothesis of zero coefficient can be rejected. The coefficients significant at the 10% level (based on a two-tailed test) or higher are in bold face. Standard errors are clustered by firms and years to adjust them for heteroskedasticity, cross-sectional, and time-series correlation.

dependent variable		**investment, I**				
specification		**1**	**2**	**3**	**4**	**5**
value	Q	**1.418**	**1.303**	**1.032**	**1.171**	**1.021**
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
election dummy	ELECTION	-	**-0.464**	**-0.456**	**-0.528**	**-0.439**
			(0.05)	(0.02)	(0.05)	(0.01)
election dummy × value	ELECTION × Q	-	-	**-0.408**	**-0.499**	**-0.234**
				(0.00)	(0.00)	(0.00)
cash flow	CF	**8.053**	**9.448**	**7.048**	**4.515**	**3.069**
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
election dummy × cash flow	ELECTION × CF	-	-	-	**4.683**	**2.310**
					(0.00)	(0.00)
growth rate in sales	ΔSALES	-	-	-	-	**0.222**
						(0.00)
interaction of election dummy with growth in sales	ELECTION × ΔSALES	-	-	-	-	**0.092**
						(0.01)
one over assets	1/A	**-0.049**	**-0.095**	**-0.084**	-0.029	**-0.123**
		(0.05)	(0.01)	(0.03)	(0.16)	(0.00)
future abnormal return	R	**-1.136**	**-2.132**	**-1.012**	**-1.537**	**-2.137**
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
growth in GDP	ΔGDP	**0.556**	**0.626**	**0.805**	**0.602**	**0.573**
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
financial development	FD	-0.009	-0.032	-0.023	-0.018	-0.016
		(0.34)	(0.33)	(0.41)	(0.48)	(0.50)
rule of law	LAW	**0.018**	**0.0147**	**0.0149**	**0.0148**	**0.013**
		(0.00)	(0.01)	(0.01)	(0.01)	(0.02)
property rights protection	PROPERTY	0.0231	0.0226	0.0241	0.0244	0.0286
		(0.17)	(0.18)	(0.17)	(0.32)	(0.30)
growth in GDP variability	V(ΔGDP)	**-0.162**	**-0.165**	**-0.168**	**-0.169**	**-0.170**
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
real exchange rate variability	V(ER)	-0.178	-0.170	-0.145	-0.150	-0.149
		(0.17)	(0.21)	(0.28)	(0.25)	(0.25)
inflation variability	V(INFL)	**-0.079**	**-0.050**	**-0.059**	**-0.068**	-0.011
		(0.00)	(0.00)	(0.00)	(0.00)	(0.30)
firm fixed effects		included	included	included	included	included
year fixed effect		included	included	included	included	included
F-statistics		**360.070**	**358.120**	**362.380**	**362.480**	**359.800**
R^2-adj		0.162	0.164	0.169	0.170	0.177
number of country-firm-year observations		214,946	214,946	214,946	214,946	180,025

Figure 1: Comparison of Investment-to-Price Sensitivity for Election and Non-Election Years. This graph plots investment-to-price sensitivity for election and non-election periods for U.S. and international samples. The length of the bar for non-election years is equal to the value of coefficient β_2 in specification 3 of Table II for the U.S. sample and specification 3 of Table III for the international sample. The length of the bar for election years is equal to $\beta_2 + \beta_3$. β_2 is the coefficient on firm value *Q*; β_3 is the coefficient on the interaction term of election dummy variable with firm value, *ELECTION* × *Q*.

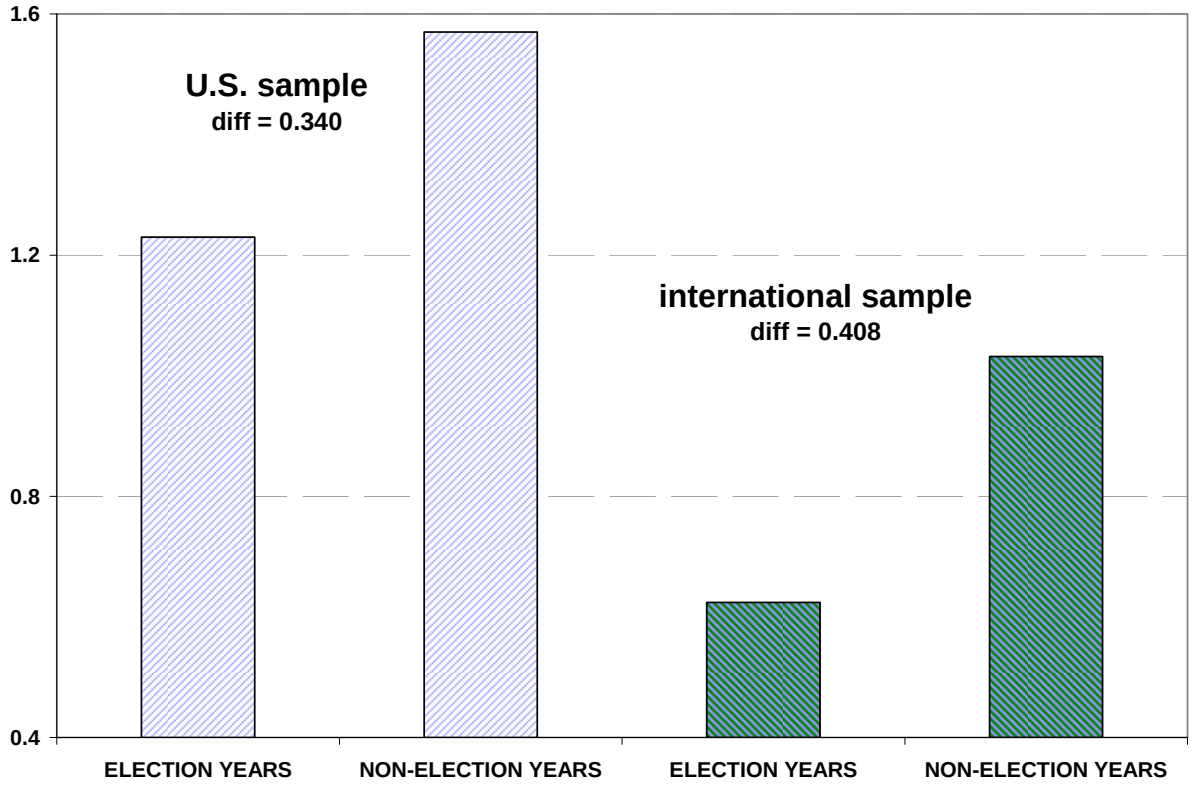

Table IV
Investment, Firm Value, and Cash Flow, Conditional on Elections: Panel Regressions Excluding Firms from the U.S., U.K., and Japan.

This table reports the results of specification 4 in Table III excluding firms from U.S. (specification 1), U.S. and Japan (specification 2), and U.S., Japan, and U.K. (specification 3). Coefficients on control variables (1/A, R, *ΔGDP*, *FD*, *LAW*, *PROPERTY*, *V(ΔGDP)*, *V(ER)*, and *V(INFLATION)*) are included but not reported.

dependent variable		**investment, I**		
specification		**excludes U.S.**	**excludes U.S. and Japan**	**excludes U.S., Japan, and U.K.**
value	Q	**1.044**	**1.118**	**1.347**
		(0.00)	(0.00)	(0.00)
election dummy	ELECTION	**-0.359**	**-0.314**	**-0.291**
		(0.00)	(0.00)	(0.00)
election dummy × value	ELECTION × Q	**-0.432**	**-0.293**	**-0.440**
		(0.00)	(0.00)	(0.00)
cash flow	CF	**4.001**	**3.076**	**3.806**
		(0.00)	(0.00)	(0.00)
election dummy × cash flow	ELECTION × CF	**3.009**	**3.191**	**2.844**
		(0.00)	(0.02)	(0.00)
firm fixed effects		included	included	included
year fixed effect		included	included	included
F-statistics		**347.820**	**228.930**	**263.870**
R^2-adj		0.169	0.183	0.187
number of country-firm-year observations		169,829	149,943	133,820

Table V
Variation in Investment-to-Price Sensitivity across Elections with Different Degrees of Uncertainty.

This table reports the results of the following panel (country-firm-years) regressions run on the sample of international companies from 1980 through 2006 (specifications 1 and 2) and from 1990 through 2006 (specifications 3 and 4):

$$I^c_{i,t} = \eta_i + \eta_t + \beta_1 \cdot UNCERT^c_t + \beta_2 \cdot Q^c_{i,t-1} + \beta_3 \cdot UNCERT^c_t \times Q^c_{i,t-1} + \gamma_1 \cdot CF^c_{i,t} + \gamma_2 \cdot UNCERT^c_t \times CF^c_{i,t} + \varphi_1 \cdot (1/A^c_{i,t}) + \varphi_2 \cdot R^c_{i,t+1}$$
$$+ \varphi_3 \cdot \Delta GDP^c_{t-1} + \varphi_4 \cdot FD^c_{t-1} + \varphi_5 \cdot LAW^c_{t-1} + \varphi_6 \cdot PROPERTY^c_{t-1} + \varphi_7 \cdot V(\Delta GDP^c_{t-1}) + \varphi_8 \cdot V(ER^c_{t-1}) + \varphi_9 \cdot V(INFLATION^c_{t-1}) + \varepsilon_{i,t} \ ,$$

where *i* indexes firms, *c* countries, and *t* years. Variables η_i and η_t are firm and year fixed effects. *I* is firm investment (expressed in %), *UNCERT* is a proxy for electoral uncertainty measured by either election margin (specifications 1 and 2) or political risk (specifications 3 and 4), *Q* is firm value, *UNCERT* × *Q* is the interaction term of electoral uncertainty with firm value, *CF* is firm cash flow, *UNCERT* × *CF* is interaction term of electoral uncertainty with firm cash flow, *1/A* is one over total assets, *R* is future abnormal stock return, *ΔGDP* is country growth rate in real GDP per capita, *FD* is financial development (sum of stock market capitalization and private credit relative to GDP), *LAW* is rule of law from ICRG (assessment of the strength of a country's tradition of law and order), *PROPERTY* is the index of property rights protection from EIU, *V(ΔGDP)* is time-series standard deviation of real GDP per capita, *V(ER)* is time-series standard deviation of real exchange rate, and *V(INFLATION)* is time-series standard deviation of inflation rate. Firms that belong to financial industry or utilities are dropped. Political risk variable is available for years from 1990 through 2006. Numbers in parentheses are probability levels at which the hypothesis of zero coefficient can be rejected. The coefficients significant at the 10% level (based on a two-tailed test) or higher are in bold face. Standard errors are clustered by firms and years to adjust them for heteroskedasticity, cross-sectional, and time-series correlation.

dependent variable		**investment, I**			
uncertainty measure		**electoral margin**		**political risk**	
specification		**1**	**2**	**3**	**4**
value	Q	**0.880**	**0.929**	**1.139**	**1.008**
		(0.00)	(0.00)	(0.00)	(0.00)
uncertainty	UNCERT	**0.022**	**0.026**	0.006	0.008
		(0.01)	(0.01)	(0.15)	(0.12)
election uncertainty × value	UNCERT × Q	**0.013**	**0.010**	**0.019**	**0.024**
		(0.00)	(0.00)	(0.00)	(0.00)
cash flow	CF	**7.348**	**6.921**	**5.348**	**6.834**
		(0.00)	(0.00)	(0.00)	(0.00)
election uncertainty × cash flow	UNCERT × CF	-	**-0.130**	-	**-0.211**
			(0.00)		(0.00)
one over assets	1/A	**-0.061**	**-0.038**	-0.009	-0.016
		(0.02)	(0.10)	(0.23)	(0.20)
future abnormal return	R	**-0.944**	**-0.847**	**-0.617**	**-0.783**
		(0.00)	(0.00)	(0.00)	(0.00)
growth in GDP	ΔGDP	**0.638**	**0.529**	**0.552**	**0.617**
		(0.00)	(0.00)	(0.00)	(0.00)
financial development	FD	-0.039	-0.015	-0.019	-0.012
		(0.52)	(0.61)	(0.20)	(0.27)
rule of law	LAW	**0.020**	**0.031**	**0.039**	**0.034**
		(0.00)	(0.00)	(0.00)	(0.00)
property rights protection	PROPERTY	0.020	0.018	0.035	0.020
		(0.22)	(0.23)	(0.14)	(0.20)
growth in GDP variability	V(ΔGDP)	**-0.156**	**-0.181**	**-0.147**	**-0.114**
		(0.00)	(0.00)	(0.00)	(0.00)
real exchange rate variability	V(ER)	**-0.114**	**-0.120**	-0.116	-0.150
		(0.10)	(0.10)	(0.18)	(0.20)
inflation variability	V(INFL)	-0.009	-0.006	-0.005	-0.005
		(0.32)	(0.29)	(0.15)	(0.16)
firm fixed effects		included	included	included	included
year fixed effect		included	Included	included	Included
F-statistics		**214.120**	**219.00**	**280.090**	**286.470**
R^2-adj		0.165	0.171	0.170	0.184
number of country-firm-year observations		214,046	214,046	153,055	153,055

Table VI
Information Quality and Information Distribution during Elections.

This table reports the results of the following panel (country-firm-years) regressions run on the sample of international firms from 1995 (or 2000) through 2006,

$$INFORMATION^{c}_{i,t} = \eta_i + \alpha \cdot trend + \beta_1 \cdot ELECTION^{c}_{t} + \beta_2 \cdot SIZE^{c}_{i,t-1} + \beta_3 \cdot \Delta S^{c}_{i,t-1} + \beta_4 \cdot FIN\_NEED^{c}_{j,t-1} + \beta_5 \cdot LEV^{c}_{i,t-1}$$
$$+ \varphi_1 \cdot GDP^{c}_{t-1} + \varphi_2 \cdot FD^{c}_{t-1} + \varphi_3 \cdot LAW^{c}_{t-1} + \varphi_4 \cdot PROPERTY^{c}_{t-1} + \varepsilon_{i,t} \quad ,$$

where *i* indexes firms, *c* and countries, *t* years. Variable η_i denotes firm fixed effects, and *trend* is time trend. The dependent variable, *INFORMATION*, is "log transformation of R^2" in specification 1 (R^2 of the regression of firm return on country market return and U.S. market return), "return autocorrelation" in specification 2 (measure of information asymmetry based on return autocorrelation conditional on trading volume), or "earnings surprise" in specification 3 (measure of information asymmetry based on annual average absolute values of abnormal returns on the dates of earnings announcements). The sample years are from 1995 through 2006 for "log transformation of R^2" and "return autocorrelation" measures, and from 2000 through 2006 for "earnings surprise" measure. The independent variables are: *SIZE*, log of firm total assets, Δ*SALES*, firm growth rate in sales, *FIN_NEED*, industry financial need calculated as industry median value of capital expenditures minus cash flows from operations divided by capital expenditures, *LEV*, firm leverage calculated as long-term debt over total assets, *GDP*, country real GDP per capita, *FD*, country financial development (sum of stock market capitalization and private credit relative to GDP), *LAW*, country rule of law index from ICRG (assessment of the strength of a country's tradition of law and order), and *PROPERTY*, country index of property rights protection from EIU. Firms that belong to financial industry or utilities are dropped. Numbers in parentheses are probability levels at which the hypothesis of zero coefficient can be rejected. The coefficients significant at the 10% level (based on a two-tailed test) or higher are in bold face. Standard errors are clustered by firms and years to adjust them for heteroskedasticity, cross-sectional, and time-series correlation.

dependent variable		**log transformation of R^2**	**return autocorrelation**	**earnings surprise**
specification		**1**	**2**	**3**
election dummy	ELECTION	**0.099**	**0.040**	**0.817**
		(0.00)	(0.09)	(0.10)
time trend	TREND	**-0.042**	**-0.017**	0.237
		(0.00)	(0.00)	(0.54)
size	SIZE	**0.730**	**-0.118**	**-0.083**
		(0.00)	(0.00)	(0.01)
growth rate in sales	ΔSALES	**0.032**	0.016	-0.003
		(0.00)	(0.31)	(0.64)
financial need	FIN_NEED	**-1.293**	0.031	0.020
		(0.00)	(0.36)	(0.20)
leverage	LEV	**-0.180**	**-0.201**	**-0.309**
		(0.00)	(0.00)	(0.01)
GDP	GDP	**-0.563**	**-0.088**	**-0.614**
		(0.00)	(0.05)	(0.00)
financial development	FD	-0.059	0.042	0.003
		(0.13)	(0.23)	(0.75)
rule of law	LAW	**-0.019**	-0.001	0.034
		(0.00)	(0.30)	(0.54)
property rights protection	PROPERTY	**0.014**	0.182	0.076
		(0.00)	(0.14)	(0.20)
firm fixed effects		included	included	included
F-statistics		**149.010**	**25.920**	**14.390**
R^2-adj		0.339	0.358	0.272
number of country-firm-year observations		32,981	26,297	8,617

Table VII
Investment-to-Price Sensitivity for Election and Non-Election Periods for Individual Countries.

This table presents investment-to-price sensitivity for non-election and election periods by country. "Investment-to-price sensitivity, non-election periods" and "Q-election dummy" are defined as coefficients $\hat{\beta}_2$ and $\hat{\beta}_3$, respectively, in the following panel (firm-years) regression run for every country separately during years from 1980 through 2006 (1960-2006 for the U.S. firms),

$$I_{i,t} = \eta_i + \beta_1 \cdot ELECTION_t + \beta_2 \cdot Q_{i,t-1} + \beta_3 \cdot ELECTION_t \times Q_{i,t-1} + \gamma_1 \cdot CF_{i,t} + \varphi_1 \cdot (1/A_{i,t}) + \varphi_2 \cdot R_{i,t+1} + \varepsilon_{i,t} \quad ,$$

where *i* indexes firms, *t* years, and η_i firm fixed effects. *I* is firm investment (expressed in %), *ELECTION* is a dummy variable that takes value of one during election years, and zero otherwise, *Q* is firm value, *ELECTION* × *Q* is the interaction term of election dummy variable with firm value, *CF* is firm cash flow, 1/*A* is one over total assets, and *R* is future stock return. "Investment-to-price sensitivity, election periods" is the sum of $\hat{\beta}_2$ and $\hat{\beta}_3$. "differential investment-to-price sens., % difference" is the change in the sensitivity scaled by the value of sensitivity during non-election periods, $\hat{\beta}_3 / \hat{\beta}_2$ expressed in percentages.

country	investment-to-price sens., non-election periods	Q-election dummy	investment-to-price sens., election periods	differential investment-to-price sens., %
ARGENTINA	**0.387**	**-0.222**	0.165	-57%
AUSTRALIA	**1.533**	-0.068	1.465	-4%
AUSTRIA	**1.770**	0.009	1.779	1%
BANGLADESH	0.450	**-0.391**	0.059	-87%
BELGIUM	**2.309**	-0.099	2.210	-4%
BRAZIL	**0.489**	-0.211	0.278	-43%
CANADA	**3.534**	0.076	3.610	2%
CHILE	**2.998**	0.021	3.019	1%
COLOMBIA	**0.221**	**-0.129**	0.092	-58%
COSTA RICA	**0.618**	-0.184	0.434	-30%
CROATIA	**0.766**	**-0.559**	0.207	-73%
CZECH REPUBLIC	0.599	0.083	0.682	14%
DENMARK	**1.765**	0.076	1.841	4%
ECUADOR	**0.629**	**-0.258**	0.371	-41%
EGYPT	**0.919**	-0.224	0.695	-24%
ESTONIA	**0.249**	-0.075	0.174	-30%
FINLAND	**4.131**	0.026	4.157	1%
FRANCE	**2.479**	-0.305	2.174	-12%
GERMANY	**1.253**	0.059	1.312	5%
GREECE	**1.036**	**-0.161**	0.875	-16%
HUNGARY	0.259	**-0.201**	0.058	-78%
ICELAND	**0.347**	-0.032	0.315	-9%
INDIA	**0.078**	**-0.003**	0.075	-4%
INDONESIA	**0.023**	-0.020	0.003	-87%
IRELAND	**1.796**	-0.010	1.786	-1%
ISRAEL	**0.811**	-0.093	0.718	-11%
ITALY	**1.419**	-0.225	1.194	-16%
JAMAICA	**0.114**	**-0.110**	0.004	-96%
JAPAN	**0.650**	-0.018	0.632	-3%
KENYA	0.031	-0.026	0.005	-84%
KOREA	**0.146**	**-0.194**	-0.048	-133%
LATVIA	**0.287**	-0.101	0.186	-35%
LITHUANIA	**0.152**	**-0.122**	0.030	-80%
LUXEMBOURG	**2.831**	-0.370	2.461	-13%
MALAYSIA	**0.593**	**-0.207**	0.386	-35%
MEXICO	**0.914**	**-0.286**	0.628	-31%
NETHERLANDS	**3.803**	-0.180	3.623	-5%
NEW ZEALAND	**2.009**	0.040	2.049	2%
NIGERIA	**0.102**	**-0.09**	0.012	-88%
NORWAY	**3.372**	0.083	3.455	2%
PAKISTAN	**0.308**	**-0.208**	0.100	-68%
PANAMA	**0.088**	**-0.039**	0.0492	-44%
PARAGUAY	**0.238**	**-0.343**	-0.105	-144%
PERU	**0.081**	**-0.291**	-0.21	-359%
PHILIPPINES	**0.314**	**-0.149**	0.165	-47%
POLAND	**0.210**	**-0.185**	0.025	-88%
PORTUGAL	**1.450**	0.003	1.453	0%
RUSSIAN FEDERATION	**0.144**	-0.024	0.120	-17%
SINGAPORE	**1.623**	0.029	1.652	2%
SLOVAKIA	**0.429**	**-0.411**	0.018	-96%
SLOVENIA	**0.053**	**-0.021**	0.032	-40%
SOUTH AFRICA	**0.521**	**-0.259**	0.262	-50%

SPAIN	**2.920**	**-0.218**	2.702	-7%
SRI LANKA	**0.016**	-0.009	0.007	-56%
SWEDEN	**1.284**	0.073	1.357	6%
SWITZERLAND	**4.614**	0.041	4.655	1%
TAIWAN	**0.276**	-0.135	0.141	-49%
THAILAND	**0.331**	-0.155	0.176	-47%
TUNISIA	**0.414**	0.151	0.565	36%
TURKEY	**0.219**	**-0.228**	-0.009	-104%
UNITED KINGDOM	**3.831**	-0.034	3.797	-1%
UNITED STATES OF AMERICA	**1.570**	**-0.341**	1.229	-22%
VENEZUELA	**1.998**	-0.298	1.700	-15%
average	1.124	-0.123	1.001	-39.1%

Table VIII
Variation of Differential Investment-to-Price Sensitivity across Countries.

This table reports the results of the following cross-country regressions:

$$\left(\hat{\beta}_3^c / \hat{\beta}_2^c\right) = \alpha + \delta_1 \cdot CORRPUPT^c + \delta_2 \cdot POL\_DISCL^c + \delta_3 \cdot STATE^c + \delta_4 \cdot MEDIA^c + \delta_5 \cdot IP^c + \delta_6 \cdot LAW^c + \delta_7 \cdot FIN\_DEV^c + \delta_8 \cdot GDP^c + \varepsilon^c \quad ,$$

where *c* indexes countries. The dependent variable, $(\hat{\beta}_3 / \hat{\beta}_2)$, is the change in the sensitivity scaled by the value of sensitivity during non-election periods, expressed in percentages. This variable appears in the fifth column of Table VII. The independent variables are: CORRUPT, corruption index from Transparency International (it measures the extent to which corruption is perceived to exist in the public and political sectors), *POL_DISCL*, public disclosure by politicians from Djankov et al. (2009) (this variable is equal to one if the filled-out forms of financial and business interests by the Members of Parliament can be accessed publicly. It is equal to 0.5 if only one of the two forms, financial interests or business interests, is publicly available. Otherwise, it is equal to zero), *STATE*, index of prevalence of state ownership and control from EIU, *MEDIA*, media freedom index from Journalists without Borders (the assessment of the state of press freedom in a country based on violations directly affecting journalists and news media), *IP*, an updated investor protection index from Djankov et al. (2008), *LAW*, rule of law index from ICRG (assessment of the strength of a country's tradition of law and order), *GDP*, log of real GDP per capita, and *FD*, financial development (sum of stock market capitalization and private credit relative to GDP). The coefficients significant at the 10% level (based on a two-tailed test) or higher are in bold face. The reported standard errors are robust to heteroskedasticity. Larger values of *CORRUPTION*, *POL_DISCL*, *STATE*, *MEDIA*, *IP*, *LAW* indicate less corruption, better political disclosure, less state ownership, freer media, better investor protection, and better law enforcement, respectively. All of the independent variables are calculated as average values during the time period when the dependent variable is estimated.

specification		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
corruption	CORRUPT	-	**0.072**	-	-	-	-	-	**0.067**
			(0.00)						(0.03)
disclosure by politicians	POL_DISCL	-	-	**0.064**	-	-	-	-	**0.048**
				(0.00)					(0.01)
state ownership	STATE	-	-	-	**0.061**	-	-	-	**0.051**
					(0.05)				(0.10)
media freedom	MEDIA	-	-	-	-	0.041	-	-	0.014
						(0.19)			(0.89)
investor protection	IP	-	-	-	-	-	0.017	-	0.005
							(0.21)		(0.38)
rule of law	LAW	-	-	-	-	-	-	0.056	0.022
								(0.13)	(0.25)
financial development	FD	0.001	0.004	0.007	0.002	00.003	0.001	0.001	0.007
		(0.74)	(0.22)	(0.23)	(0.26)	(0.22)	(0.23)	(0.25)	(0.16)
GDP	GDP	**0.130**	**0.172**	**0.125**	**0.121**	**0.139**	**0.093**	0.072	0.021
		(0.00)	(0.00)	(0.01)	(0.05)	(0.00)	(0.09)	(0.13)	(0.35)
F-stat		**2.590**	**7.170**	**6.310**	**5.530**	**4.410**	**2.950**	**4.890**	**24.650**
R^2-adj		0.049	0.212	0.180	0.137	0.118	0.087	0.159	0.384
number of country observations		63	61	62	62	49	48	63	48

Table IX
Investment-to-Price Sensitivity, Elections, and Firm Performance.

This table reports firm performance results. First, we identify companies that experience an abnormal drop in investment during election years (that is, from *e-1* to *e*, where *e* is a country-specific election year) based on residuals of country-specific regressions as in Table VIII. We form a dummy variable (*DECREASE)* that takes value of one for firms whose residuals are negative during election years, and zero otherwise. We run the following firm-country-election specific regression,

$$PERFORMANCE^{c}_{i,(e+1,e+3)} = \eta_i + \eta_e + \beta_1 \cdot DECREASE^{c}_{i,e} + \gamma_1 \cdot R\&D^{c}_{i,e} + \gamma_2 \cdot SIZE^{c}_{i,e} + \gamma_3 \cdot LEV^{c}_{i,e} + \varphi_1 \cdot GDP^{c}_{e} + \varphi_2 \cdot FD^{c}_{e} + \varphi_3 \cdot LAW^{c}_{e} + \varepsilon_{i,e} \quad ,$$

where *i* indexes firms, *c* countries, and *e* election years. Variables η_i and η_e are firm and election fixed effects. The dependent variable, *PERFORMANCE*, is measured by either return on assets (*ROA*) in specifications 1 and 2 or growth rate in sales (ΔS) in specifications 3 and 4. *ROA* and growth rate in sales are calculated over three years (*e+1*,*e+3*) after elections. The control variables are: *R&D*, firm R&D expenditures scaled by total assets, *SIZE*, log of firm total assets, *LEV*, firm long-term debt over total assets, *GDP*, country real GDP per capita, *FD*, country financial development (sum of stock market capitalization and private credit relative to GDP), and *LAW*, country rule of law from ICRG (assessment of the strength of a country's tradition of law and order) Numbers in parentheses are probability levels at which the hypothesis of zero coefficient can be rejected. The coefficients significant at the 10% level (based on a two-tailed test) or higher are in bold face. Standard errors are clustered by firms and election years to adjust them for heteroskedasticity, cross-sectional, and time-series correlation.

dependent variable		**ROA**		**ΔS**	
specification		**1**	**2**	**3**	**4**
investment-to-price sens. decrease	DECREASE	**-4.070**	**-3.940**	**-8.617**	**-6.208**
		(0.00)	(0.00)	(0.00)	(0.00)
R&D expenditures	R&D	-	**0.098**	-	**0.201**
			(0.00)		(0.00)
size	SIZE	-	**-0.087**	-	**-0.064**
			(0.00)		(0.00)
leverage	LEV	-	0.284	-	**0.112**
			(0.12)		(0.10)
log of GDP per capita	GDP	-	**0.016**	-	**0.028**
			(0.00)		(0.00)
financial dev.	FD	-	0.111	-	0.056
			(0.16)		(0.32)
rule of law	LAW	-	**0.010**	-	**0.083**
			(0.00)		(0.00)
firm fixed effects		included	included	included	included
election fixed effect		included	Included	included	included
F-statistics		**7.300**	**10.610**	**21.280**	**28.470**
R^2-adj		0.204	0.386	0.171	0.260
number of firm-country-year observations		25,238	28,318	23,541	20,790