Politically Connected Boards and Corporate Investment Under Policy Uncertainty

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ABSTRACT

This paper explores how firms manage policy uncertainty. Prior research shows policy uncertainty results in a decline of corporate investment. We find these declines attenuate 71 to 73 percent when companies have politically connected (PC) board members. Motivated by the recent rise in ruling through executive orders, we find that board connectedness to presidential committees is what matters. Endogeneity does not seem to explain our results. Cross-sectional tests further show that our results are stronger for firms with high incentives to delay investment under policy uncertainty and for firms with more presidential committee experience accumulated on boards. Finally, the market seems to react more favorably to presidential committee board appointments during periods of high policy uncertainty. Our findings contribute to a better understanding of how firms manage policy uncertainty.

Keywords: Corporate governance; board of directors; political uncertainty; political connections; presidential committees; corporate investment.

JEL Classifications: G31, G34, G38, M40

Data availability: Data are available from the sources identified in the paper.

I. INTRODUCTION

Policy uncertainty disrupts corporate investment. Because investment outcomes depend, in part, on public policy, capital expenditures are riskier during periods of high policy uncertainty. Companies, on average, appear to reduce or avoid this risk by reducing their capital investments during periods of high policy uncertainty (Fischer 2016; Gulen and Ion 2016). With the growth in policy uncertainty across recent periods (Baker, Bloom, Canes-Wrone, Davis, and Rodden 2014; Baker, Bloom, Davis, and Kost 2019), it is increasingly important to understand how companies manage such risk.

According to Wellman (2017) firms may do so by establishing political connections. These allow them to better assess potential policy outcomes and thereby mitigating adverse effects of policy uncertainty on corporate investment. In support thereof, she finds that firms making campaign contributions to policymakers invest more during periods of high policy uncertainty. It is important to note, however, that campaign contributions per se are only a proxy for potential political connections. Contributions merely reflect money transfers to politicians seeking to win upcoming elections. They reveal little about how firms gain access and process information on how policy creation or enforcement impacts those firms once the supported politicians take office. In this study, we aim to fill this gap and explore whether firms manage policy uncertainty through board members with former or current political appointments.

Companies rely on board members to provide monitoring and advising services pertaining to operations and investment opportunities. In this context, political uncertainty has risen to the top of concerns according to interviews with 20 non-executive directors (Diligent Institute 2019). These directors further highlight that in order to better manage policy uncertainty corporate boards require specific insights into the process of drafting new legislation as well as enforcing

existing legislation. As one board member explained, "it's [about] years of experience watching the chess pieces move around the board. They can then lend credible insights into what has happened and contribute to identifying the range of possible outcomes, and provide suggestions as to how to think about responses to those outcomes". Following this line of argument, we thus predict that by appointing board members with political experience such insights flow directly into the board room and their investment advisory activities.

In this paper, we identify corporate board members with political experience and empirically test whether these board members help firms manage policy uncertainty for better investment decision-making. To answer our research question, we hand collect data for a sample of S&P 500 firms for a period spanning 18 years. We follow prior literature in measuring politically connected (PC) boards and policy uncertainty. For PC boards, we manually verify all employment titles for the directors who work currently or previously in the government (Goldman, Rocholl, and So 2009). We identify an independent director as being PC if he or she currently serves or previously served in a political position.[1] We dichotomously classify boards as PC when at least one serving director is connected. In additional analysis, we measure a board's connectedness using the total number of PC directors on their board. We measure policy uncertainty using a composite measure developed by Baker, Bloom, and Davis (2016).

We find that a PC board attenuates the negative effect policy uncertainty has on corporate investment. Our multivariate analyses provide evidence that the differences in sensitivity are economically and statistically significant. Firms with PC boards are approximately 71 percent

[1] Such positions include working in the White House (special assistant, policy planning staff, chief of staff, etc.), Congress (U.S. Senator or Representative), a presidential advisory committee (President's Export Council, President's Council on Jobs and Competitiveness, President's Strategic and Policy Forum, etc.), or in another fashion (Governor, Ambassador, department commissioner or administrator, etc.). See Appendix A for additional detail on methodology used to identify PC boards.

less sensitive to policy uncertainty.[2] Figure 1 charts the relation between predicted corporate investment and policy uncertainty for firms with and without PC boards. This relation is plotted for corporate investment 1, 2, 3, and 4 quarters into the future (*CAPX*(1), *CAPX*(2), *CAPX*(3), and *CAPX*(4), respectively). Figure 1 indicates that firms with PC boards are less sensitive to policy uncertainty.

We also explore variation in board members' political experience and distinguish between board connectedness to the White House, Congress, presidential committees, and others. We find the attenuation of policy uncertainty to be limited to presidential committee board connectedness. These results are consistent with the view that a significant portion of policy uncertainty rests with the president because of a rise in ruling through executive orders (Baker et al. 2014; Caputo and Duch 2019).[3] This view is further shared by several non-executive directors who argue that since the election of Obama and his willingness to rule through executive orders the range of potential policy outcomes has increased dramatically (Diligent Institute 2019). In our sample, this trend seems to manifest itself in a rise in corporate demand for board members with executive branch experience. During our sample period the number of such board members increases by roughly 50 percent whereas the number of all other political board members with experience in the White House, Congress, or other institutions remains fairly stable.

To relate our findings to Wellman (2017), we further compare the explanatory power between presidential committee board connectedness on the one hand and campaign

[2] For companies with (without) PC boards, the point elasticity of *CAPX*(1) with respect to policy uncertainty is such that a doubling of policy uncertainty would yield a 9 percent (30 percent) decline in *CAPX*(1) when evaluated at mean values and a decline of 10 percent (33 percent) when evaluated at median values. For context, unlogged policy uncertainty average per quarter ranges from 63 to 216 across our sample period.

[3] Recent reports list this as the leading global economic risk (Wood 2020; Bremmer and Kupchan 2020).

contributions on the other hand. Economically, the mitigating effect of our variable is twice as large as campaign contributions. Also, as opposed to campaign contributions, presidential committee board connectedness affects corporate investment only through policy uncertainty. Taken together, these results suggest that presidential committee board connectedness is a less noisy and more direct measure of how firms manage policy uncertainty for better investment decision-making. An untabulated analysis reveals that firms with higher campaign contributions are more likely to appoint presidential committee members to their boards of directors. We interpret the finding as that campaign contributions are an important mechanism through which the scarce presidential committee connections are allocated across firms. This is consistent with view that campaign contributions give firms initial access to Washington, through which subsequent political connections may be established depending on the specific means (Schuler et al. 2002).

We perform a variety of tests to address potential endogeneity concerns. First, we consider the adequacy of our controls and the risk that our findings are the result of a correlated omitted variable bias. More specifically, we follow Gulen and Ion (2016) and include additional control variables for investment opportunities and economic uncertainty and find our results to hold. Because correlated omitted variables will always present some risk, we improve our understanding of this risk by calculating the impact threshold of a confounding variable (ITCV). We find that in order for an omitted variable to explain all of our results, it must be more impactful than any of our existing controls. We also conduct an endogeneity test as suggested by Oster (2019) and fail to find evidence that our results are driven by omitted variables. Second, because PC connected and non-connected firms are not alike, the former may have chosen to appoint presidential committee members on their board for reasons that also explain their

investment behavior over policy uncertainty cycles. We address this concern and improve causal inference by entropy-balancing our sample of PC connected and non-connected firms (Hainmueller 2012). Third, we acknowledge that not all relevant investment determinants might be observable and conduct instrumental variable (IV) regression. As a source of exogenous variation in presidential committee connectedness we either use presidential committee appointments of sitting board members or mandatory retirements of presidential committee board members. In both cases, we find evidence that presidential committee board connectedness attenuates the negative relation between policy uncertainty and corporate investment.

Having established a link between presidential committee board connectedness and investment behavior under policy uncertainty we further aim to identify the underlying mechanism of this relation. To do so, we explore two kinds of cross-sectional variation in our sample firms. On the one hand, we find our results to be stronger for firms with higher incentives to delay investment in response to increased policy uncertainty, i.e., firms exposed to investment irreversibility (Gulen and Ion 2016). On the other hand, we document stronger results for firms with more presidential committee experience accumulated on their board. Taken together, our findings seem to suggest that corporate boards receive valuable insights from presidential committee members' experience that allows them to refrain from delaying irreversible investment during periods of high policy uncertainty.

So far, we have identified a specific channel through which firms mitigate adverse effects of policy uncertainty on corporate investment, i.e., appointing board members with presidential committee experience. We conclude our empirical analysis by analyzing the value implications of such board appointments. Using abnormal announcement returns around the appointment of presidential committee board members, we find that those appointments are more value-

enhancing during periods of high policy uncertainty. Economically, a one-standard deviation increase in policy uncertainty increases abnormal announcement returns by 0.94 percentage points. Thus, establishing presidential committee board connections seems a value-enhancing way of managing increased policy uncertainty.

We make various contributions to the literature. First and most importantly, we contribute to a better understanding of how firms manage policy uncertainty for investment purposes. While Wellman (2017) shows that campaign contributing firms are more likely to manage policy uncertainty, we identify a specific mechanism through which firms are able to do so. Our insights have important implications for firms and regulators. On the firm side, any firm can financially contribute to political campaigns. However, only a few firms will succeed in appointing a current or former presidential committee member to their board of directors. Not all firms would, thus, appear equally able to manage the rising policy uncertainty recently observed in the United States. On the regulator side, our study implies that transparency and stability in the executive branch may mitigate the harmful effects of policy uncertainty at the economy level.

Second, we contribute to the literature on politically connected boards. According to this literature, PC boards enhance firm value (Goldman et al. 2009) through favorable allocation of government contracts (Goldman et al. 2013), lower equity financing costs (Boubakri et al. 2012), better access to bank financing (Claessens et al. 2008), higher tax aggressiveness (Kim and Zhang (2015), and higher probability of corporate bailout (Faccio et al. 2006) or government funding (Duchin & Sosyura 2012). In our study, we identify an additional channel through which PC boards enhance firm value, i.e., managing policy uncertainty for better investment decision-making. To better understand the underlying mechanisms at work it is important to recognize distinctions across political board connections. For example, Duchin and Sosyura (2012) find

that political board connections to the Treasury, banking regulators, or finance committees matter most for receiving government funding. We add to their study and show that political board connections to the president (i.e. via presidential committees) play an outsized role in managing policy uncertainty. In this context, we also document a rise in the relative economic importance of political board connections to presidential committees and, thereby, add to a better understanding of how the composition of politically connected boards varies over time. Our study suggests that this is how firms respond to the recently observed rise in policy uncertainty caused by ruling through executive orders (Baker et al. 2014; Caputo and Duch 2019).

Finally, we contribute to the literature on corporate governance. The board of directors plays a vital role in advising and monitoring corporate operations. There is a recurring call in the literature to better understand how certain board and director attributes affect board (and ultimately firm) behavior (Adams, Hermalin, and Weisbach 2010). There is a need to understand the network effects of directors, how such connections affect firms' decision-making, and the economic consequences of such connections (Roychowdhury, Shroff, and Verdi 2019). We provide evidence that PC board members via presidential committees alter the way companies respond to their regulatory environment. These dynamic findings highlight the need to consider a firm's external environment when evaluating a board's impact (Hutchinson and Gul 2004).

The paper proceeds as follows. In section 2, we describe our sample construction and research design. In sections 3, we investigate how politically connected boards affect corporate investment sensitivity to policy uncertainty. In section 4, we address potential endogeneity concerns. In section 5, we examine in more detail the underlying mechanism through which presidential committee board connectedness diminishes investment sensitivity to policy

uncertainty. In section 6, we explore the value implications of appointing presidential committee board members over policy uncertainty cycles. In section 7, we conclude.

II. DATA AND RESEARCH DESIGN

Sample and Variable Construction

Our sample contains quarterly data for S&P 500 firms from calendar years 2000 to 2017. We start with the year 2000 due to the substantial increase in BoardEx coverage of firms (Fracassi and Tate 2012). We define a firm as belonging to the S&P 500 firms if they belonged to the index in the year of 2012. After performing the match of Compustat and BoardEx, we exclude financial firms (SIC codes 6000 - 6999) and utility firms (SIC codes 4900 - 4999). Following Gulen and Ion (2016), we limit our sample to firms with at least three-year, non-missing observations for all the accounting variables in our sample. Our main sample contains 22,979 firm-quarter observations for 354 unique firms.

We borrow our policy uncertainty measure (*POLICY UNCERTAINTY*) from Baker et al. (2016), which is comprised of three components: policy uncertainty reported in newspapers, policy uncertainty identified in current tax legislation, and policy uncertainty pertaining to fiscal policy identified in inflation and government spending forecasts.[4] While the policy uncertainty index reports monthly values, we follow Gulen and Ion (2016) and calculate our policy uncertainty measure by quarter. We do this by first averaging the policy uncertainty index across the three calendar months contained in each fiscal quarter and then taking the natural logarithm. To facilitate interpretation in our regression analyses, we de-mean *POLICY UNCERTAINTY*.[5]

[4] We thank Baker et al. for making their measure publicly available (https://www.policyuncertainty.com).
[5] Demeaning *POLICY UNCERTAINTY* eases interpretation when a continuous variable is interacted with a dichotomous measure. Table 1 presents the descriptive statistics prior to demeaning.

We follow Goldman et al. (2009) in identifying independent PC directors. We manually verify all employment titles and identify independent directors who currently hold or previously held significant positions in the government.[6] Specifically, a director is identified as PC if he or she currently serves or previously served in the White House (special assistant, policy planning staff, chief of staff, etc.), Congress (U.S. Senator or Representative), a presidential advisory committee (President's Export Council, President's Council on Jobs and Competitiveness, President's Strategic and Policy Forum, etc.), or in another fashion (Governor, Ambassador, department commissioner or administrator, etc.). On the one hand, we create a broad indicator variable *PC BOARD*, that is equal to one if a company has at least one PC independent director, and zero otherwise. On the other hand, we exploit variation in political board connections and create four different indicator variables PC WHITE, PC CONGRESS, PC PRES, and PC OTHER that equal one if a company has at least one PC independent director of the respective category, or zero otherwise.

We construct firm-level variables based on financial data retrieved from quarterly Compustat files. Following Gulen and Ion (2016), our main variable of interest, *CAPX*, is capital investment scaled by one-quarter lagged total assets (Compustat item ATQ). Because capital investment is a year-to-date data in quarterly Compustat (CAPXY), we measure *CAPX* using Compustat item CAPXY in the first fiscal quarter and the change in CAPXY in the fiscal quarters 2, 3, and 4. In our research design, we model future *CAPX*. We adopt a nomenclature where *CAPX*(N) denotes the value of *CAPX* in quarter $t+N$. Note that we measure policy uncertainty in quarter t.

[6] See Appendix A for additional information on our methodology. In addition, Appendix A provides detail on the calculation of PC variables used in additional analyses.

For standard investment regression financial controls, we measure operating cash flows (*OCF*), Tobin's Q (*TOBIN'S Q*), and sales growth (*GROWTH*). We define *OCF* as Compustat item OANCFY in the first fiscal quarter and the change in OANCFY in fiscal quarters 2, 3, and 4, all scaled by one-quarter lagged total assets (ATQ). We measure *TOBIN'S Q* as the market value of assets divided by the book value of assets (ATQ). We calculate the market value of assets by taking the market value of equity (PRCCQ × CSHOQ), adding the book value of assets (ATQ), and subtracting the book value of equity (CEQQ), as well as deferred tax assets (TXDBQ).[7] Sales growth is the year-on-year growth rate in sales measured by quarterly figures (Compustat item SALEQ).

To control for macro-level economic and political events, we measure real gross domestic product (GDP) growth (*GDP GROWTH*) and identify presidential election years (*ELECTION*). To compute *GDP GROWTH*, we retrieve Real GDP data from the website of Federal Reserve Bank of St. Louis (GDPC1). See Appendix B for detailed variable definitions. We winsorize all continuous variables at the top and bottom 1 percent to limit the impact of extreme outliers.[8]

Table 1 presents descriptive statistics for our sample. Firms in our sample have PC boards approximately 53 percent of the time. Our sample contains both within firm and cross-firm variation. We identify 95 (86) unique firms with boards that are never (always) PC during our sample period. Alternatively, we find our sample contains 173 unique firms whose politically connected status (*PC BOARD*) changes at least once during the sample period.

Distinguishing between various political board connections, we find presidential committee connectedness to be prevalent in our sample with 34.8 percent, followed by

[7] If missing, we replace deferred tax assets (TXDBQ) with zero.
[8] Our results are robust to truncating rather than winsorizing.

connectedness to the White House (20.4 percent), Congress (8.1 percent), and others (7.4 percent). Note that the types of connections are not mutually exclusive, i.e., one connection by a given firm for example could be identified as presidential committee and White House.

Research Design

Our hypothesis tests whether PC boards moderate the sensitivity of corporate investment to policy uncertainty. We follow Gulen and Ion (2016) in modeling corporate investment under policy uncertainty. To test our hypothesis, we include an indicator variable that identifies PC boards, along with an interaction term to identify the moderation that PC boards might have on policy uncertainty's effect on corporate investment. This yields the following model:

$$\begin{aligned} CAPX(\mathrm{N}) \; = \alpha_0 &+ \gamma_1 \, POLICY\ UNCERTAINTY_t + \gamma_2 \, PC\ BOARD_{it} \\ &+ \gamma_3 \, POLICY\ UNCERTAINTY_t \times PC\ BOARD_{it} + [CONTROLS]_{it} \\ &+ [FIXED\ EFFECTS] + \varepsilon_{it} \end{aligned} \quad (1)$$

for all firms, *i*, and fiscal quarters, *t;* where *CAPX*(N) equals *CAPX* for firm *i* in quarter *t*+N; and where *FIXED EFFECTS* include firm and seasonal fixed effects.[9]

Following Gulen and Ion (2016), *POLICY UNCERTAINTY* is a quarterly measure based on the uncertainty index from Baker et al. (2016). *PC BOARD* is an indicator variable equal to one if at least one director identifies as a PC, and zero otherwise. Given Gulen and Ion's findings (2016), we expect γ_1 to be significantly negative. We focus on estimating the interaction effect between policy uncertainty and PC boards on capital expenditure of firm *i* in quarter *t*+N. The coefficient of interest, γ_3, captures the moderating effect of PC boards, ceteris paribus. $CONTROLS_{it}$ contains a vector of both firm-specific and macro control variables, which mirror

[9] So as not to absorb the macro effects of *POLICY UNCERTAINTY* (γ_1) in our fixed effects, we do not include quarterly fixed effects. In untabulated tests, we include year fixed effects. While the main effect of *POLICY UNCERTAINTY* (γ_1) is largely absorbed, the results pertaining to *PC BOARD*'s attenuation of *POLICY UNCERTAINTY* (γ_3), remain qualitatively similar and statistically significant.

those used by Gulen and Ion (2016). Firm-specific controls include Tobin's Q (*TOBIN'S Q*), operating cash flows (*OCF*), and sales growth (*GROWTH*). *GDP GROWTH* captures macroeconomic conditions, and *ELECTION* identifies presidential election years. We also account for seasonal fluctuations in investment by using calendar and fiscal quarter controls. To control for unobserved time-invariant firm heterogeneity, we employ the use of firm fixed effects.[10] We denote the error term as ε_{it}.

Following Gulen and Ion (2016) we two-way cluster standard errors at the firm and calendar-quarter level.

III. BASIC INVESTMENT REGRESSION RESULTS

Politically connected boards

We present our main results in Table 2. Panel A shows the regression results when using the more general independent variable *PC BOARD*. We measure the dependent variable, *CAPX*, in quarter *t+1* in Columns (1) and (2), in quarter *t+2* in Columns (3) and (4), in quarter *t+3* in Columns (5) and (6), and in quarter *t+4* in Columns (7) and (8). In uneven Columns, we model *CAPX* without controlling for *PC BOARD* and effectively replicate the findings of Gulen and Ion (2016) for our sample. Consistent with their results, we find *POLICY UNCERTAINTY* has a significantly negative effect on future corporate investment.

In even Columns, we test our hypothesis by adding *PC BOARD* and interacting it with *POLICY UNCERTAINTY*. The coefficient on the interaction term, denoted as γ_3 in regression equation (1), is positive and statistically significant irrespective of the quarter in which we measure future investment. To evaluate the economic significance, we compute point elasticities

[10] Our primary results are robust to substituting industry fixed effects for our firm fixed effects structure.

(i.e. percentage change in corporate investment conditional on *PC BOARD* when policy uncertainty increases by 1 percent). For firms with (without) PC boards, the point elasticity of *CAPX*(1) is −0.09 percent (−0.30 percent) when the model is evaluated at mean values and −0.10 percent (−0.33 percent) when evaluated at median values.[11] Both the mean and median elasticities indicate that companies with PC boards appear to be 71 percent less sensitive to policy uncertainty. This significant decrease in sensitivity remains relatively consistent across the remaining three lead variables. The decreases are 72 percent, 72 percent, and 73 percent for *CAPX*(2), *CAPX*(3), and *CAPX*(4), respectively.[12]

To visualize the attenuation effect PC boards have on the relation between *POLICY UNCERTAINTY* and *CAPX*, we plot predicted investment levels in Figure 1. Specifically, we condition on whether the firm has a PC board, evaluate the model at the mean, and predict the investment levels at the 1st, 5th, 25th, 50th, 75th, 95th, and 99th policy uncertainty percentiles. The figure indicates that, across all lead measures of *CAPX*, investment decisions are less sensitive to policy uncertainty when firms have PC boards. Firms with PC boards invest comparably more (less) than firms without PC boards when policy uncertainty is high (low). On average, our descriptive statistics indicate that firms with or without PC boards invest the same (see Table 1, panel B).

Board members may establish their political connections by several methods. For example, one PC board member may be a presidential advisor while another may be a state legislator. We classify the various ways of becoming PC into four broad methods: White House,

[11] For context, unlogged policy uncertainty ranges from 63 to 216 across our sample period.
[12] When evaluated at mean values, the elasticities for firms with (without) PC boards are −0.07 percent (−0.27 percent), −0.07 percent (−0.24 percent), and −0.05 percent (−0.19 percent) for *CAPX*(2), *CAPX*(3), and *CAPX*(4), respectively. When evaluated at median values, the elasticities are −0.08 percent (−0.29 percent), −0.07 percent (−0.26 percent), and −0.05 percent (−0.20 percent), respectively.

U.S. Congress, Presidential committees and advisory boards, and other. Appendix A provides additional detail on the types of connections that encompass each method and our methodology for identifying these connections.

In Table 3, we re-estimate our main regression equation (1) and replace the general variable *PC BOARD* with the four variables *PC WHITE HOUSE*, *PC CONGRESS*, *PC PRES COMM*, and *PC OTHERS* each representing one of the board connection subcategories. We find that only the interaction term between *POLICY UNCERTAINTY* and *PC PRES COMM* is positive and statistically significant. The results hold for all leading quarters of measuring corporate investment – from *t+1* in Column 1 to *t+4* in Column 4. Thus, our distinction between various political board connections to Washington seems to suggest political board connectedness via presidential committees is what drives our documented results. This finding is consistent with the view that a great deal of policy uncertainty emanates from the executive branch and its tendency to rule through executive orders (Arezki and Fetzer 2019; Baker et al. 2014; Caputo and Duch 2019). It would also help explain why we observe a simultaneous rise in presidential committee board connections with increasing policy uncertainty over our sample period (see Table A2 Panel A). Due to the importance of presidential committee members in explaining our results, we focus on *PC PRES COMM* as main independent variable for the remaining empirical analyses. Nevertheless, all our results are robust to using the broader variable *PC BOARD*.

Political Contributions

Our study explores how certain political connections help firms manage investment under policy uncertainty. We find that directors connected via presidential committees moderate the effect policy uncertainty has on corporate investment, presumably by providing insights into how

the executive branch and its ruling through executive orders impacts the company. Our findings, thus, build on the study of Wellman (2017) and shed light into the kind of political connections firms establish in order to manage policy uncertainty after gaining initial access to Washington through political campaign contributions.

To better relate our findings to the study of Wellman (2017), we replicate her analysis within our framework and re-examine our findings in light of political contributions. We compute three variables from the Wellman (2017) study ($CONNECTED_{it}^{Candidate}$, $CONNECTED_{it}^{Financial}$, and $CONNECTED_{it}^{Constituentcy}$) and rename them to avoid confusion with our measure of presidential committee board connectedness ($CONTRIBUTIONS_{it}^{Candidate}$, $CONTRIBUTIONS_{it}^{Financia}$, and $CONTRIBUTIONS_{it}^{Constit}$, respectively). These variables capture the number of candidates a firm supports, the amount of financial support given, and the number of candidates that the firm supports that are running for office in the firm's home state. See Appendix B for detailed definitions and Wellman (2017) for additional discussion regarding the construction of these variables.

In order to explore if presidential committee board members are a less noisy and more direct measure of political connection through which firms manage policy uncertainty, we extend and modify our basic regression equation (1) as follows:

$$\begin{aligned} CAPX(\mathrm{N}) = {} & \alpha_0 + \gamma_1 POLICY\ UNCERTAINTY_t + \gamma_2 CONTRIBUTIONS_{it} \\ & + \gamma_3 POLICY\ UNCERTAINTY_t \times CONTRIBUTIONS_{it} \\ & + \gamma_4 PC\ PRES\ COMM_{it} + \gamma_5 POLICY\ UNCERTAINTY_t \times PC\ PRES\ COMM_{it} \\ & + [CONTROLS]_{it} + [FIXED\ EFFECTS] + \varepsilon_{it} \end{aligned} \quad (2)$$

We present our results in Table 4. In Columns (1) and (2); (3) and (4); and (5) and (6) we present the results when using $CONTRIBUTIONS_{it}^{Candidate}$, $CONTRIBUTIONS_{it}^{Financial}$, and

$CONTRIBUTIONS_{it}^{Constituentcy}$ as our contribution measure, respectively. For each measure, we first estimate equation (2) without our presidential committee board connection variable. Consistent with Wellman (2017), we find that political contributions appear to attenuate the negative relation between policy uncertainty and corporate investment across all three contribution measures. For example, in Column (1) the regression coefficient on the interaction term *POLICY UNCERTAINTY* × *CONTRIBUTIONS* is positive and statistically significant. Note, however, that campaign contributions *directly* affect corporate investment as well. More specifically, holding policy uncertainty constant firms with higher campaign contributions seem to invest less. This finding indicates that the decision to make campaign contributions affects corporate investment for reasons other than managing policy uncertainty. In contrast, adding *PC PRES COMM* and its interaction with *POLICY UNCERTAINTY* in Column (2) seems to suggest that our presidential committee board connection variable affects investment only *indirectly* through policy uncertainty. Thus, we interpret our findings as that presidential committee board connectedness is a less noisy and more direct measure of how firms manage policy uncertainty for investment decision-making. Our results are robust to using the other two campaign contribution measures in Columns (3) and (4), and Columns (5) and (6), respectively.

To compare the economic magnitude of the attenuation effect between campaign contributions and presidential committee board connectedness, we conduct the following untabulated analysis. We replace the continuous variable *CONTRIBUTIONS* with a binary variable indicating whether a firm makes campaign contributions or not and find that the attenuation effect presidential committee board connectedness is, in economic terms, approximately twice the size of campaign contributions.

Overall, our findings suggest that presidential committee board connectedness is a less noisy and more direct measure of how firms manage policy uncertainty. We note that our sample is composed of S&P 500 firms with multinational interests while the sample used in Wellman (2017) has no such restriction. For smaller firms, the relative importance of campaign contributions may be higher.

IV. ENDOGENEITY

In this section, we address various potential endogeneity concerns that could drive our documented decline in investment sensitivity to policy uncertainty for firms with presidential committee board connectedness.

Omitted Variables

Investment regression specifications are commonly subject to an omitted variable problem because of unobservable investment opportunities. Hence, one might argue that presidential committee board connectedness is correlated with unobserved investment opportunities. Furthermore, because policy uncertainty may capture broader economic uncertainty (Gulen and Ion 2016) one might also argue that firms with presidential committee board connections are simply less exposed to economic uncertainty. To address these concerns, we follow Gulen and Ion (2016) and add additional variables that capture investment opportunities and economic uncertainty.[13] Specifically, we control for expected investment opportunities (economic uncertainty) by controlling for *EXPECTED GDP GROWTH*, *LEADING ECONOMIC INDEX*, and *CONSUMER CONFIDENCE* (*GDP FORECAST DISPERSION*,

[13] As an alternative approach, we include annual fixed effects that absorb most of the variation in these macro variables. The results (untabulated) support our primary findings.

PROFIT GROWTH SD, *VXO*, *RETURN SD*, and *JLN UNCERTAINTY*). The results, presented in Table 5, indicate that our findings are robust to the inclusion of these additional variables. In agreement with the findings of Gulen and Ion (2016), we find that corporate investment maintains its negative relation with policy uncertainty.[14] In addition, we find the effectiveness of presidential committee board members in attenuating this negative relation is robust to the inclusion of these additional macro control measures. Across all Columns, the coefficient on the interaction term of *POLICY UNCERTAINTY* and *PC PRES COMM* remains positive and statistically significant.

Because it is impossible to conduct an exhaustive search of correlated omitted variables, we follow Frank (2000) and Larcker and Rusticus (2010) by calculating the impact threshold of a confounding variable (ITCV) in order to gain perspective on the risk that our findings are the result of a correlated omitted variable bias. We calculate this threshold for the coefficient of our variable of interest, the interaction of *POLICY UNCERTAINTY* and *PC PRES COMM*. The ITCV measures how correlated an omitted variable must be with capital investment and the variable of interest in order to overturn our statistical findings. To benchmark this threshold, we calculate the marginal impact of the main effects of the interacted variables and of the control variables.

Panel A in Table 6 presents the results. For all specifications, the ITCV is higher than the impact of the control variables. The comparatively high threshold suggests that, in order to overturn our primary findings, an omitted variable must correlate with capital expenditure and the interaction term of interest more than any of the existing control variables. Given the

[14] As an alternative approach, we include annual fixed effects that absorb most of the variation in these macro variables. The results (untabulated) support our primary findings.

explanatory power of our models,[15] we believe it is unlikely that an omitted variable exists with the power to overturn our results.

We further examine if unobservable omitted variables drive our results by following the methodology developed by Altonji, Elder, and Taber (2005) and Oster (2019). Following Oster (2019), we calculate the identified set from the points estimates and movement in R-squared between the baseline estimate and the model with the full set of controls. A key input is the R-squared from a hypothetical regression R_{max} which contains both observed and unobserved controls. We set R_{max} equal to either $1.25\tilde{R}$, $1.3\tilde{R}$, or $2.2\tilde{R}$. Oster (2019) argues that nearly all randomized results which she examines survive a cutoff of $1.25\tilde{R}$, yet she recommends to use a cutoff of $1.3\tilde{R}$ Mian and Sufi (2014) use an even more conservative cutoff of $2.2\tilde{R}$. In our non-randomized data, our variable of interest, *POLICY UNCERTAINTY x PC PRES COMM*, survive the robustness cutoffs as the identified set does not include 0 either in none of the identified sets as shown in columns (1) to (3). Thus, we reject effect is driven by omitted variables within the stated bounds.

Entropy Balancing

Another endogeneity issue is that firms may choose to have presidential committee connections for reasons that also explain their investment pattern over policy uncertainty cycles. For example, connected firms may simply have a preference to smooth investment over time and, thus, appear to be less affected by policy uncertainty. Although firms with and without PC boards spend similar amounts on capital expenditures, these firms are not alike in all respects (See Table 1, panel B). Of particular concern in our setting is that the variance of investment opportunities is lower for connected firms. To account for this potential concern and obtain

[15] All of our primary specifications have adjusted R^2s of at least 0.67.

causal inference, we match our treatment and control groups by entropy-balancing our sample (Hainmueller 2012). We balance the means and variances of the firm-specific variables (i.e. *TOBIN'S Q*, *OCF*, *GROWTH*) between firms with and without PC boards. Panel A of Table 7 compares the sample both before and after the entropy balancing. After this process, the sample appears to be well balanced. We model equation (1) using the newly balanced sample. The results, presented in panel B, are almost identical to our prior findings. Policy uncertainty has a significantly negative effect on corporate investment, and across all leading measures of capital expenditures, presidential committee board members attenuate this relation in a statistically significant manner.

Instrumental Variables

Our previous approaches to address endogeneity concerns crucially rely on our ability to observe all relevant investment determinants. Instrumental variable regression (IV) is an alternative approach that alleviates the problem of observing all relevant investment determinants. What the IV approach requires for validity is an exogenous source or so called instrumental variables that determine presidential committee board connectedness while being unrelated to corporate investment decisions.

In our first IV specification, we argue that new appointments to presidential committees of incumbent directors are a valid instrument. By focusing on new political appointments rather than director changes, this instrument identifies changes in a board member's political connectedness while holding their board membership constant. Because these political appointments are generally made due to the director's knowledge and expertise related to the political process (Executive Order 13538 2010; Dal Bó, Finan, Folke, Persson, and Rickne 2017), we expect the variable to be uncorrelated to a firm's investment policy or opportunities

and therefore to satisfy the exclusion restriction. To construct our instrumental variable (*APPOINT*), we count for each firm the cumulative number of sitting directors that become politically connected to presidential committees during the sample period. In a second IV design, we borrow from the existing literature an alternative instrument, namely, mandatory director retirements (Fracassi and Tate 2012). It is unlikely that mandatory retirements are subject to unobservable factors related to firms' investment policy or opportunities.[16] For each firm, we count the cumulative number of presidential committee board directors who leave office during our sample period up to the current fiscal year due to perceived mandatory retirement (*RETIRED*). We use *The Time to Retirement* in BoardEx to identify whether a director is at or beyond the firm's mandatory retirement age. If *The Time to Retirement* is less than one when the director leaves the firm, then we classify it as a mandatory retirement. If the time to retirement is missing, then we count director retirements as a mandatory retirement if the directors are at least 70 years old (Fahlenbrach, Low, and Stulz 2010).

Table 8 reports the results. In panel A, we use *APPOINT* to instrument our variables of interest. Specifically, following Balli and Sørensen (2013), we instrument for both *PC PRES COMM* and the interaction term between *PC PRES COMM* and *POLICY UNCERTAINTY*. Column (1) presents the first stage regression instrumenting for *PC PRES COMM*, and Column (2) presents the first stage regression instrumenting for *POLICY UNCERTAINTY* × *PC PRES COMM*. In Column (3), we show the second stage regression results when the dependent variable is the one period lead in corporate investment, *CAPX*(1). The result supports our primary empirical findings. Firms with presidential committee board members make investments that are less sensitive to policy uncertainty. The Kleibergen-Paap F statistic rejects weak

[16] We refrain from using board member deaths as an instrumental variable due to data. Our sample includes 12 instances of a PC director holding a board directorship within approximately one year of their death.

instruments. In Columns (4), (5), and (6), we show the second stage regression for *CAPX*(2), *CAPX*(3), and *CAPX*(4), respectively.[17] The qualitative findings remain unchanged. In all instances, statistical tests reject the hypothesis of weak instruments.

A priori, we expect the OLS bias to be positive because companies that benefit the most from having political connections to presidential committees are more likely to seek these board members. However, the OLS coefficients in our basic specification, Table 2, are about half of the coefficients from this instrumental variables approach. Given that we reject the weak instrument hypothesis, a plausible economic explanation of the attenuation in the economic impact is that the 2SLS regressions identifies a local average treatment effect rather than the population effect (Jiang 2017). Policy uncertainty depends on who is in office and as one non-executive director has put it "because there are such dramatically different opinions on each side of our government, there is risk that there could be major changes from one administration to the next" (Diligent Institute, 2019). Thus, board members that held presidential committee positions in the past might be less effective than newly appointed committee members in providing insights about the policy uncertainty that emanates from the current administration.

In panel B, we repeat our instrumental regression analysis using our other IV, mandatory retirements (*RETIRED*). Again, the Kleibergen-Paap F statistic rejects weak instruments. More importantly, the results provide additional evidence that our main empirical finding, that boards with presidential committee members attenuate the effect *POLICY UNCERTAINTY* has on capital expenditures, is not the result of endogeneity. Here again, we acknowledge the local average treatment effect may explain the magnitude of the coefficients that we observe. In this case, firms that experience mandatory retirements of presidential committee board members no

[17] Because of minor changes in the sample composition, we perform unique first stage regressions that correspond to these columns and omit them for brevity. They are qualitatively similar to those reported in Columns (1) and (2).

longer have access to insights of presumably more tenured board members with experience in navigating policy uncertainty under the current as well as former administrations.

V. UNDERLYING MECHANISM

In this section, we explore in more detail through what mechanism investment sensitivity to policy uncertainty is attenuated by boards connected to presidential committees. We hypothesize that insights into the workings of politics around the president help boards of directors manage policy uncertainty which diminishes incentives to delay investment decisions. Following this line of argument, we predict that our documented results should be stronger for firms with larger incentives to delay investment decisions or for firms with more presidential committee insights accumulated on their board of directors. To test the first prediction, we follow Gulen and Ion (2016) and argue that incentives to delay investment increase with investment irreversibility. We test the second prediction by exploring cross-sectional heterogeneity in the number of current and former presidential committee members sitting on boards.

Irreversibility of Investment Decisions

Policy uncertainty incentivizes firms to postpone capital expenditures until the uncertainty dissipates. In the event of an unfavorable shift in policy, firms may find their capital assets are not as valuable to firm operations and profitability as they once were. Following Gulen and Ion (2016), we exploit cross-sectional variation in the irreversibility of a firm's capital expenditures. If boards connected to presidential committee are able to mitigate the effects of policy uncertainty on investment decisions, we predict the magnitude of their impact will be greater when incentives to delay those decisions are high because of irreversibility.

We employ three measures of irreversibility: *CAPITAL INTENSIVE*, *SUNK COST INDEX*, and *DURABLE INDUSTRY*.[18] For capital-intensive firms, investment in property, plant, and equipment (PPE) plays an outsized role in the firm's success, and misguided investment decisions will be harder to correct. Also, in industries where sunk costs are more prevalent, capital expenditures are more likely to pertain to irreversible investments. Finally, because industries dealing in durable goods are more susceptible to industry-wide cyclicality firms operating in those industries will find it more costly to reverse investment during down cycles.

We repeat our primary analysis modeled by equation (1) while conditioning on the nature of firms' capital investments and present our results in Table 9. In panel A, we split the sample based on their level of capital intensity. In agreement with prior findings (Gulen and Ion 2016), we find the investment decisions of capital intensive companies appear to be, overall, more sensitive to *POLICY UNCERTAINTY*. More importantly, we find presidential committee board members attenuate this relation mainly for firms that are relatively more capital intensive.

In panel B and panel C of Table 9, we repeat the analysis using *SUNK COST INDEX* and *DURABLE INDUSTRY*. In terms of sunk costs, our analysis supports the finding of Gulen and Ion (2016), i.e., the investment sensitivity to policy uncertainty is prevalent among firms classified as dealing with high irreversibility. Consistent therewith, we find the attenuation effect that we attribute to boards connected to presidential committees to be limited to firms facing high sunk costs. In panel C, we fail to replicate the results of Gulen and Ion (2016) and find firms to be equally exposed to policy uncertainty in durable and non-durable goods industries. Given that there are no apparent differences in incentives to delay investment decisions for policy uncertainty reasons between the two subsamples, it is not surprising that the same seems

[18] See Appendix B for variable definitions.

to be the case for the attenuation effect captured by *POLICY UNCERTAINTY* × *PC PRES COMM*.

Overall, we find the attenuation effect of boards connected to presidential committees to be conditional on the presence of incentives to delay irreversible investment decisions during periods of high policy uncertainty. We interpret these findings as supporting the notion that the insights of presidential committee board members help firms mitigate the holdup problem of irreversible investment decisions during periods of high policy uncertainty.

Presidential Committee Insights Accumulated on Boards

If presidential committee connectedness attenuates the effect *POLICY UNCERTAINTY* has on *CAPX* through the insights of those members into the workings of politics around the president, then we expect this effect to increase with the number of presidential committee members on boards. To test this prediction, we replace *PC PRES COMM*, our indicator variable for political connectedness via presidential committees, with *PC PRES COMM SUM*, a measure counting the number of presidential committee board members. Because the marginal insights of presidential committee board members might diminish with increasing numbers of those board members we also include the squared term $PC\ PRES\ COMM\ SUM^2$ in a separate regression.

Table 10 shows the results. Uneven Columns show the regression results without the squared term. Across all specifications, we find the sensitivity of corporate investment to political uncertainty diminishes as the number of presidential committee board members increases. Across all leading *CAPX* measures, we find evidence indicating that boards with more PC directors make investments that are less sensitive to policy uncertainty. In even Columns we show the regression results with the squared term. In Column (2), the estimated coefficient of

POLICY UNCERTAINTY × *PC PRES COMM SUM* equals 0.022 whereas the one of *POLICY UNCERTAINTY* × *PC PRES COMM SUM* equals -0.0003. Both are statistically significant suggesting there is a non-linear relationship with a turning point of 3.67 (= -0.022/(2×-0.0003) presidential committee board members. On average, until the threshold of 3.67 is reached the more presidential committee members sitting on the board the better firms seem able to manage policy uncertainty.[19] For leading *CAPX* in quarters t+2 to t+4 the results remain qualitatively similar although the estimated coefficient of the squared term is marginally non-significant. Overall, we interpret the finding in Table 10 as that the investment sensitivity to policy uncertainty of firms with presidential committee board members is attenuated through their cumulative political insights that help those firms manage policy uncertainty.

VI. VALUE IMPLICATIONS

In our final empirical analysis, we explore potential value implications of our hypothesis. If presidential committee members on board of directors help firms mitigate the adverse effects policy uncertainty has on corporate decision-making, we expect the appointment of such directors to be value-enhancing. More specifically, because the insights of presidential committee members should be more important during periods of high policy uncertainty, we predict the value of their appointment to increase with policy uncertainty. To empirically test this prediction, we follow Goldman et al. (2016) and measure abnormal announcement returns around the appointment of politicians on boards of directors. During our sample period, we identify 144 such appointments for which we are able to measure cumulative abnormal returns around the announcement date.

[19] For reference, conditioning on *PC PRES COMM SUM* being greater than zero, the mean (median) value of *PC PRES COMM SUM* is 1.56 (1.00).

Within the sample of political board appointments, we relate the cumulative abnormal returns (*CAR*) around the announcement to an indicator variable identifying presidential committee members and its interaction term with policy uncertainty. This yields the following model:

$$CAR_{it} = \alpha_0 + \gamma_1\, POLICY\ UNCERTAINTY_t + \gamma_2\, PC\ PRES_{it} + \gamma_3\, POLICY\ UNCERTAINTY_t \times PC\ PRES_{it} + \varepsilon_{it} \quad (3)$$

for all appointment events, *i*, and fiscal quarters, *t;* where *CAR* equals cumulative abnormal returns for appointment event *i* in quarter *t*. We measure cumulative abnormal returns using the Fama-French three factor model augmented with the momentum factor (FFM). In untabulated analysis, we find our results to be robust when using the market adjusted model.

The regression results are shown in Table 11. In Column (1), we regress cumulative abnormal returns on policy uncertainty. The statistically insignificant regression coefficient $\gamma_1$suggests that the announcement returns of political board members in general are unrelated to policy uncertainty. In Column (2), we add *PC PRES* and its interaction term *POLICY UNCERTAINTY* × *PC PRES*. The estimated coefficient of *PC PRES* is statistically not significant suggesting that the market does not react more favorably to the appointment of presidential committee board members. More importantly, we find a positive and statistically significant coefficient γ_3. Hence, our results suggest that the perceived value of presidential committee board appointments seems to increase with the current policy uncertainty at the time of announcement. Taken together, these results suggest that presidential committee board connectedness enhances firm value only *indirectly* through policy uncertainty. It thus seems that presidential committee board members are distinct from other political board members with a particular role that is tied to policy uncertainty and its adverse and value-reducing effects on

corporate investment. Given the short event window [0,+1], we are confident to associate the market reaction with the event of appointing a presidential committee board member during a given time of policy uncertainty. Thus, our event study further alleviates any remaining endogeneity concerns. In Column (3) and (4), we find that our regression results are robust to extending the 2-day event window to a 3-day event window [-1,+1]. Furthermore, in Column (5) to (8) we use a value-weighting aggregation scheme instead of equal-weighting and find that our results hold.

VII. CONCLUSION

We consider how PC board members affect firms' responses to policy uncertainty. While companies generally respond to policy uncertainty by decreasing capital investments (Gulen and Ion 2016), we find that firms with PC board members are 71 percent to 73 percent less sensitive to policy uncertainty. Consistent with policy uncertainty stemming from the office of the President, we find the strongest results when identifying firms that are PC via presidential committees. Additional analyses indicate that the attenuating effect of presidential committee board connectedness is cross-sectionally sensitive with respect to both the irreversibility of investment decisions and the number of presidential committee board directors. These finding suggest that firms with presidential committee board connectedness manage policy uncertainty when delaying investment is more costly and with the help of the cumulative insights provided by those board members. Finally, we find the perceived market value of presidential committee board members to increase with policy uncertainty. Overall, our study provides a better understanding of how firms manage policy uncertainty. Thus, our work speaks to concerns about increases in the overall level of policy uncertainty. Given the negative impact policy uncertainty

has on corporate investment (Gulen and Ion 2016), there are concerns regarding the potential effects of sustained increases in policy uncertainty (Fischer 2016). Our results indicate that firms may decide to manage changes in the political environment, in part, by having presidential committee members on their board. Additionally, our findings encourage future researchers to explore regulatory attempts in reducing policy uncertainty and its adverse effects on the economy emanating from the executive branch and its rise in ruling through executive orders. The President's Management Advisory Board (PMAB), for example, was formed by President Obama in 2010 before the peak of policy uncertainty in order to bring insights from the private sector to Federal Government management and operations (Executive Order 13538 2010).

Our study is not without limitations. Our sample is limited to S&P 500 firms; these firms are large and have generally broad risk exposures. The different risk profiles of smaller firms may limit the generalizability of our results. In addition, it remains an open question as to whether or not firms with presidential committee board connectedness are more susceptible to a moral hazard problem and, thus, overinvest during times of high policy uncertainty. These firms may be more likely to receive government help in the event of negative outcomes. In this case, presidential committee board connectedness may provide value to a firm's shareholders by facilitating risk-taking at the expense of taxpayers. We leave these questions for further research.

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APPENDIX A
Identifying and Categorizing Political Connections

We follow Goldman et al. (2009) in identifying politically connected (PC) boards. Using the BoardEx database, we identify independent board members that currently work or previously worked in the United States state or federal government.[20] We manually examine the results. During this examination, we categorize political connections into four broad methods of connection: white house, congress, presidential committees, and other. In Table A1, we provide additional detail describing this manual process and examples.

We define *PC BOARD* as an indicator variable that is equal to one if at least one current board member holds or previously held political employment, and zero otherwise. *PC WHITE HOUSE, PC CONGRESS,* and *PC PRES COMM* are indicator variables equal to one if we categorize the method of PC as being established via the White House, Congress, or presidential committee, respectively, and zero otherwise. *PC OTHER* is an indicator variable equal to one if a board is PC but not via one of the three identified methods, and zero otherwise. *PC PMAB* is an indicator variable equal to one if a firm's board is PC via the Presidents Management Advisory Board (PMAB), a specific presidential committee, and zero otherwise.

Table A2 provides descriptive statistics regarding the PC categories. Panel A tabulates political connections by method and year. The aggregate number of PC observations by category exceeds the number of PC observations in the sample. This occurs because firms may in a given year be PC by more than one method. Panel B provides the correlation across the various methods of being politically connected. We find *PC WHITE HOUSE* and *PC PRES COMM* to be the most correlated.

[20] We follow Goldman et al. (2009) and focus on independent directors. By doing so, we are better able to isolate the mechanism responsible for our results. We filter director employment histories for United States governmental employment (COUNTRY= "United States" and COMPANY TYPE= "Government").

TABLE A1
Identification of Political Connection Categories

White House

Description

Staff member in the White House.

Methodology

Filter employment histories to those with ties to the United States government (COUNTRY= "United States" and COMPANY TYPE= "Government"). The organizations name (COMPANY NAME) contains the words "White House." Use the role (ROLE) and role description (ROLE DESCRIPTION) to manually clean and review results.

Sample roles:
- Division Co-Chairman
- Assistant
- Manager
- Civil Servant
- Special Assistant
- Member
- Chief of Staff
- Associate Director

Sample role descriptions:
- Deputy Chief of Staff for Policy
- Chief of Protocol
- Staff Member
- Staff Assistant
- Management and Budget
- Policy Planning Staff
- Deputy Director
- Press for Foreign Affairs

Congress

Description

U.S. Senator or Representative. Does not include state legislators.

Methodology

Filter employment histories to those with ties to the United States government (COUNTRY= "United States" and COMPANY TYPE= "Government"). Identify observations where the organization name (COMPANY NAME) contains the words US House of Representatives or US Senate and manually review results.

Sample roles:
- Congressman
- Representative
- Committee Member (such as "Committee on Health, Education, Labor, and Pensions, US Senate" or "Committee on Budget, US House of Representatives")

President Committee

Description

Member of a presidential advisory committee, council, advisory board, commission, forum, etc.

Methodology

Filter employment histories to those with ties to the United States government (COUNTRY= "United States" and COMPANY TYPE= "Government"). Manually review results for presidential committees and advisory boards. Specifically, examine organization names (COMPANY NAME), roles (ROLE) and role descriptions (ROLE DESCRIPTION).

Sample committees:

- President's Export Council
- Advisory Committee for Trade Policy and Negotiations
- National Security Council
- Economic Recovery Advisory Board
- President's Council on Jobs and Competitiveness
- President's Foreign Intelligence Advisory Board
- US President's Commission on White House Fellowship
- National Infrastructure Advisory Council
- Office of The Trade Representative
- President's Strategic and Policy Forum
- President's Management Advisory Board (also used for creating *PC PMAB* variable)

Other

Description

Political connections that are not otherwise identified as being connected via the White House, Congress, or president Committee.

Methodology

Filter employment histories to those with ties to the United States government (COUNTRY= "United States" and COMPANY TYPE= "Government"). Filter out observations where the method of PC is already identified (via White House, Congress, or President Committee). Manually examine organization names (COMPANY NAME), roles (ROLE), and role descriptions (ROLE DESCRIPTION) for reasonableness.

Sample company names:	Sample roles:
- United Nations	- Ambassador
- Embassy of Germany	- US Representative
- Social Security Administration	- Deputy Director
- Securities and Exchange Commission	- Commissioner
- Internal Revenue Service	- Deputy commissioner
- Central Intelligence Agency	- Governor
- State of Florida	- Lieutenant Governor

Notes: This table provides additional detail describing our methodology for identifying and categorizing various methods of establishing political connections. Data is sourced from BoardEx.

TABLE A2
Descriptive Statistics: Political Connection Methods

Panel A: Connection Method Observations by Year

	WHITE HOUSE	*CONGRESS*	*PRES COMM*	*PC OTHER*
Year	(1)	(2)	(3)	(4)
2000	231	108	310	112
2001	243	123	335	102
2002	261	121	360	102
2003	276	120	392	108
2004	279	114	408	98
2005	280	115	435	78
2006	280	115	435	86
2007	271	105	428	88
2008	271	112	438	85
2009	259	118	456	92
2010	264	120	463	104
2011	250	119	506	108
2012	255	108	531	98
2013	273	97	537	88
2014	280	89	535	94
2015	270	77	525	100
2016	242	63	479	84
2017	228	59	472	83
Total	4,694	1,877	8,009	1,702

Panel B: Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)
(1) *PC BOARD*	1				
(2) *WHITE HOUSE*	0.48	1			
(3) *CONGRESS*	0.28	0.12	1		
(4) *PRES COMM*	0.69	0.27	0.13	1	
(5) *PC OTHER*	0.27	-0.14	-0.08	-0.21	1

Notes: This table presents additional detail on the methods by which boards become politically connected (PC). Columns (1) through (4) of panel A identify the number of observations that are PC via the White House, Congress, presidential committees, or other means. It is possible for a firm to be connected via the White House, Congress, and/or presidential committees in the same observation. See Appendix B for variable definitions and Appendix A for additional detail on our methodology for identifying these observations. Panel B provides a correlation matrix including the various ways firms may become PC and our primary variable identifying political connections, *PC BOARD*.

APPENDIX B
Variable Definitions

Variable	Definition
Independent Variables of Interest	
POLICY UNCERTAINTY	Natural logarithm of the three month average *Overall policy uncertainty index* from Baker et al. (2016) of the firm's fiscal quarter ending in calendar quarter. Source: www.policyuncertainty.com
PC BOARD	Indicator variable equal to one if at least one independent director is politically connected (PC), and zero otherwise. See Appendix A for detail on our methodology for identifying PC board members. Source: BoardEx
PC WHITE HOUSE	Indicator variable equal to one if at least one independent director is PC via a White House organization, and zero otherwise. See Appendix A for additional detail. Source: BoardEx
PC CONGRESS	Indicator variable equal to one if at least one independent director is PC via a Congressional organization, and zero otherwise. See Appendix A for additional detail. Source: BoardEx
PC PRES COMM	Indicator variable equal to one if at least one independent director is PC via a presidential committee, and zero otherwise. See Appendix A for additional detail. Source: BoardEx
PC OTHER	Indicator variable equal to one if a board is PC (*PC BOARD*= 1) and the board is not connected via any of the other specified methods (i.e. *PC WHITE HOUSE=0, PC CONGRESS*= 0*,* and *PC PRESIDENT COMM*= 0), and zero otherwise. See Appendix A for additional detail. Source: BoardEx
PC PRES COMM SUM	Total number of independent board of directors who are PC via a presidential committee. See Appendix A for additional detail. Source: BoardEx
PC PRES COMM SUM^2	The squared total number of independent board of directors who are PC via a presidential committee. See Appendix A for additional detail. Source: BoardEx

Dependent Variables

CAPX(N)	Quarterly capital expenditure, scaled by beginning of the quarter total assets. N stands for the quarter lead. *CAPX* is measured using item CAPXY in the first fiscal quarter and then adjusted for change in CAPXY in the fiscal quarters 2, 3, and 4.
CAR	Cumulative Abnormal Returns calculated using the Fama-French-momentum four factor benchmark model (FFM).

Control Variables

TOBIN'S Q	Market value of equity plus the book value of assets minus book value of equity minus deferred taxes, all divided by book value of assets ((PRCQ × CSHOQ_ATQ − CEQQ − TXDBQ) / ATQ).
OCF	Operating cash flow, scaled by beginning of the quarter total assets. *OCF* is measured using item OANCFY in the first fiscal quarter, and then adjusted for change in OANCFY in fiscal quarters 2, 3, and 4.
GROWTH	Year-on-year growth in quarterly sales, item SALEQ.
GDP GROWTH	Year-on-year growth in quarterly real GDP in 2009 dollars. Source: St. Louis Fed (research.stlouisfed.org)
ELECTION	Indicator variable equal to one if the calendar year holds a presidential election, and zero otherwise. The election years in our sample are 2000, 2004, 2008, 2012, and 2016.
EXPECTED GDP GROWTH	One-year-ahead GDP forecasts from the biannual Livingstone survey. Item G_Forecast0_To_1Year scaled by 100. Source: Philadelphia Federal Reserve (www.philadelphiafed.org/research-and-data/real-time-center/livingston-survey)
LEADING ECONOMIC INDEX	Year-on-year log change of the Conference Board's monthly Leading Economic Index. Source: Conference Board (conference-board.org)
CONSUMER CONFIDENCE	Natural logarithm of the three-month average Michigan Index of Consumer Sentiment from the University of Michigan. Source: Michigan Index of Consumer Sentiment (www.sca.isr.umich.edu/tables.html)
GDP FORECAST DISPERSION	Coefficient of variation of the biannual GDP forecasts from the Livingstone survey of the Philadelphia Federal Reserve Bank. Source: Philadelphia Federal Reserve Bank (www.philadelphiafed.org/research-and-data/real-time-center/livingston-survey)
PROFIT GROWTH SD	Quarter-on-quarter change in net income (*NIQ*) divided by average quarterly sales.

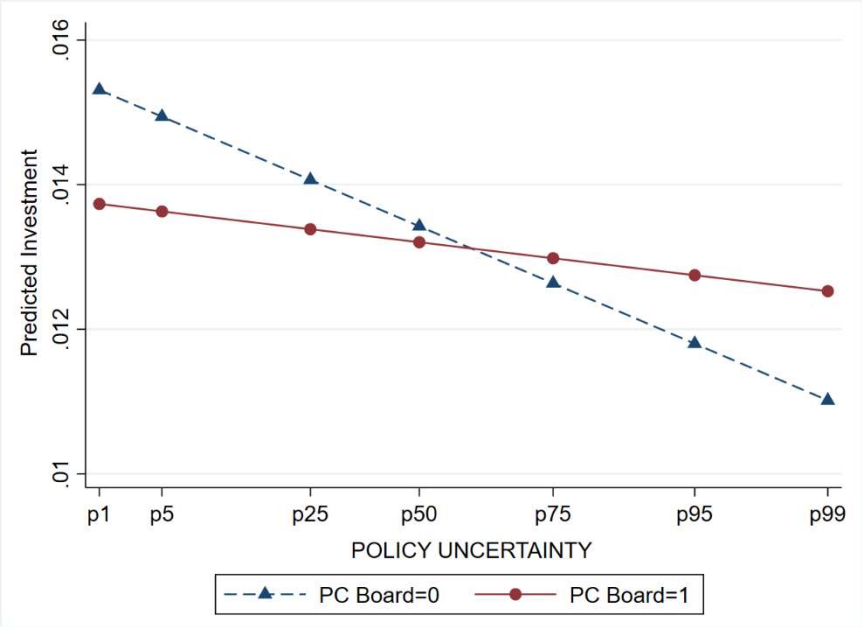
VXO	Natural logarithm of three-month average VXO index from the Chicago Board Options Exchange (Historical Month-end Prices). Source: Chicago Board Options Exchange (www.cboe.com/products/vix-index-volatility/volatility-on-stock-indexes/cboe-3-month-volatility-index-vxv)
RETURN SD	Three-month average cross-sectional standard deviation of monthly stock return (RET). Source: CRSP
JLN UNCERTAINTY	Natural logarithm of the three-month average aggregate uncertainty index from Jurado, Ludvigson, and Ng (2015). Source: www.aeaweb.org/articles?id=10.1257/aer.20131193
CAPITAL INTENSITY	Net PPE (PPENTQ) scaled by beginning of the quarter total assets.
CAPITAL INTENSIVE	Indicator variable equal to one if *CAPITAL INTENSITY* is at least the median value, and zero otherwise.
SUNK COST INDEX	Ordinal variable increasing in industry's (measured by three digit SIC code) sunk cost characteristics. Uses sales of PPE (SPPE) in the past 12 quarters, annual rent expense (XRENT), and cumulative quarterly depreciation expense (DPCY), all scaled by beginning of the quarterly net PPE (PPENTQ). Equal to zero if zero of the three industry level characteristics are above the cross-sectional medians at time t; equal to one if one or two are above the medians; and equal to 2 if all three are above the medians.
DURABLE	Correlation over the entire sample period between firm quarterly sales and GNP. Source: St. Louis Fed (fred.stlouisfed.org/search?st=GNP)
DURABLE INDUSTRY	Indicator variable equal to one for industries (measured by three digit SIC code) with above median value for *DURABLE*, and zero otherwise.
$CONTRIBUTIONS^{Candidate}$	Natural logarithm of 1 plus the number of firm supported candidates between fiscal year t and t-5. Source: The Center for Responsive Politics (www.opensecrets.org)
$CONTRIBUTIONS^{Financial}$	Natural logarithm of 1 plus the total contributions to candidates supported by the firm-sponsored PAC between fiscal year t and t-5. Source: The Center for Responsive Politics (www.opensecrets.org)

CONTRIBUTIONS^{Constit}	Natural logarithm of 1 plus the number of candidates who vote in the same state as the firm's headquarter state between fiscal year t and t-5. Source: The Center for Responsive Politics (www.opensecrets.org)
Instrumental Variables	
APPOINT	Cumulative number of preexisting independent directors who become PC due to outside activities. Source: BoardEx
RETIRED	Cumulative number of PC independent directors who leave the firm with the BoardEx variable (*The Time to Retirement*) less than 1 during the sample period up to the current fiscal year. If *The Time to Retirement* is missing, then we count a director's retirement as mandatory if he leaves at or beyond 70 (Fahlenbrach et al. 2010). Source: BoardEx

Notes: All data are sourced from Compustat unless otherwise noted.

FIGURE 1
The Relation Between Capital Investment and Policy Uncertainty While Conditioning on Politically Connected Boards

Panel A: *CAPX*(1) and *POLICY UNCERTAINTY*



Panel B: *CAPX*(2) and *POLICY UNCERTAINTY*

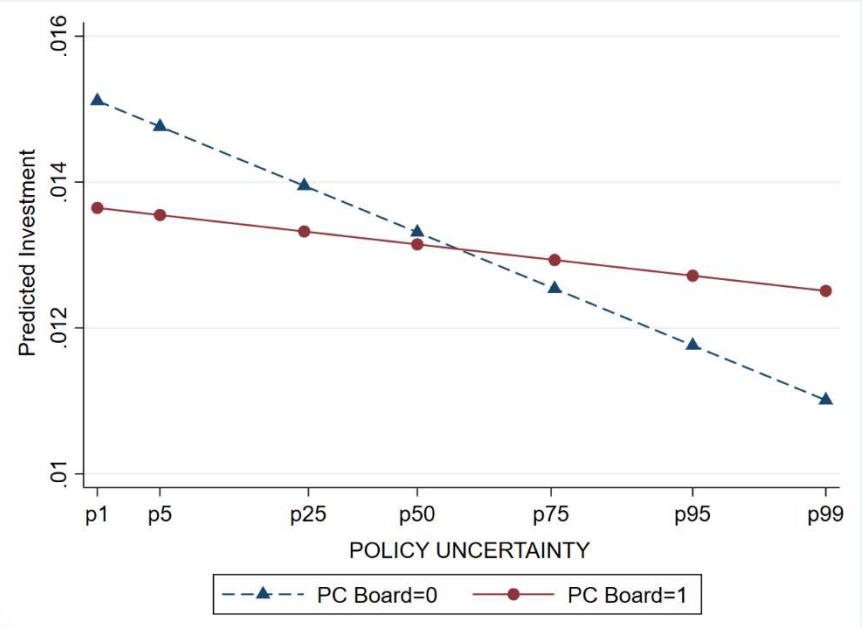
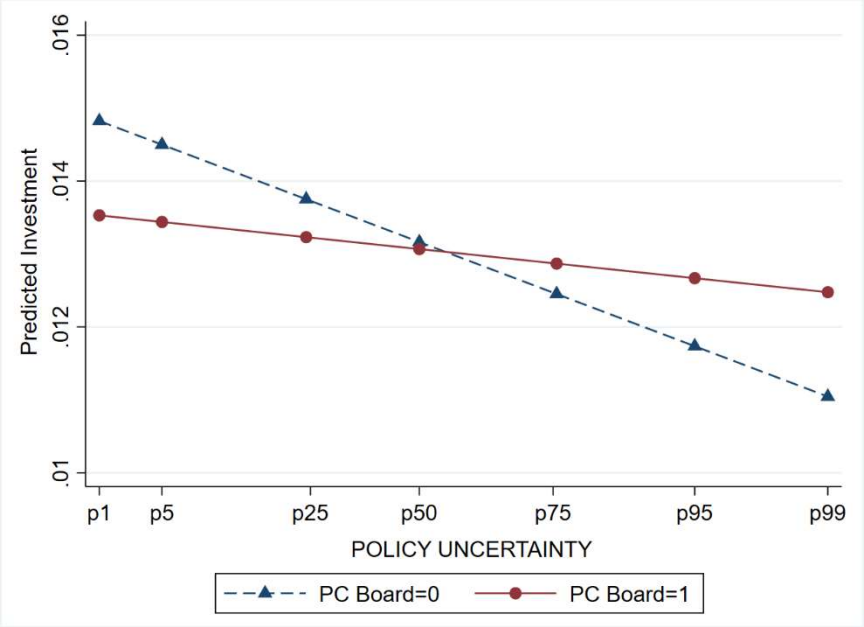
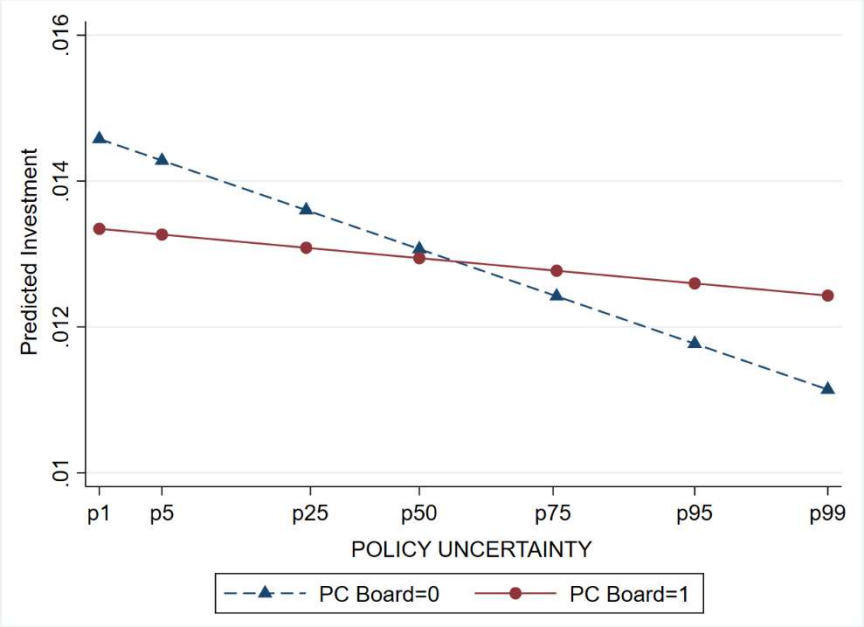


FIGURE 1 (Continued)

Panel C: *CAPX*(3) and *POLICY UNCERTAINTY*



Panel D: *CAPX*(4) and *POLICY UNCERTAINTY*



Notes: This figure plots the in-sample predictions of firm-level quarterly capital investment across different levels *POLICY UNCERTAINTY* for firms with and without politically connected (PC) boards. Panels A, B, C, and D model *CAPX*(1), *CAPX*(2), *CAPX*(3), and *CAPX*(4), respectively. We plot predictions for the 1st, 5th, 25th, 50th, 75th, 95th, and 99th percentiles of *POLICY UNCERTAINTY*. We make these predictions using equation (1). Specifically, we use the specification presented in Column (4) of Table 2. See Appendix B for variable definitions and Table 1 for detail on sample composition. We winsorize continuous variables at the 1st and 99th percentiles.

TABLE 1
Descriptive Statistics

Panel A: Descriptive Statistics

Variable	N	Mean	Median	St. Dev	p5	p25	p75	p95
CAPX(1)	22,979	0.013	0.009	0.013	0.002	0.005	0.017	0.040
CAPX(2)	22,874	0.013	0.009	0.013	0.002	0.005	0.016	0.040
CAPX(3)	22,776	0.013	0.009	0.013	0.002	0.005	0.016	0.039
CAPX(4)	22,714	0.013	0.009	0.013	0.002	0.005	0.016	0.039
TOBIN'S Q	22,979	2.299	1.862	1.387	1.027	1.389	2.696	5.178
OCF	22,979	0.033	0.030	0.030	-0.012	0.016	0.047	0.085
GROWTH	22,979	0.100	0.069	0.235	-0.217	-0.006	0.163	0.517
GDP GROWTH	22,979	0.020	0.022	0.017	-0.028	0.014	0.029	0.042
ELECTION	22,979	0.274	0	0.446	0	0	1	1
EXPECTED GDP GORWTH	22,979	0.027	0.028	0.009	0.007	0.025	0.032	0.039
LEADING ECONOMIC INDEX	22,979	0.008	0.025	0.067	-0.142	-0.006	0.051	0.087
CONSUMER CONFIDENCE	22,979	4.421	4.451	0.148	4.089	4.323	4.527	4.644
GDP FORECAST DISPERSION	22,979	0.658	0.623	0.244	0.351	0.490	0.801	1.181
PROFIT GROWTH SD	22,979	0.036	0.029	0.030	0.018	0.023	0.036	0.103
VXO	22,979	2.927	2.840	0.389	2.368	2.634	3.225	3.539
RETURN SD	22,979	0.076	0.066	0.031	0.049	0.058	0.082	0.152
JLN UNCERTAINTY	22,979	-0.401	-0.426	0.122	-0.550	-0.477	-0.361	-0.102
PC BOARD	22,979	0.529	1	0.499	0	0	1	1
PC WHITE HOUSE	22,979	0.204	0	0.403	0	0	0	1
PC CONGRESS	22,979	0.081	0	0.273	0	0	0	1
PC PRES COMM	22,979	0.348	0	0.476	0	0	1	1
PC OTHER	22,979	0.074	0	0.262	0	0	0	1
CONT. CANDIDATE	22,979	2.358	2.079	2.418	0	0	4.710	5.994
CONT. CANDIDATE DUMMY	22,979	0.523	1	0.499	0	0	1	1
CONT. FINANCIAL	22,979	6.543	9.159	6.377	0	0	12.717	14.694

CONT. FINANCIAL DUMMY	22,979	0.522	1	0.500	0	0	1	1
CONT. CONSTITUENCY	22,979	1.743	0	1.947	0	0	3.738	4.804
CONT. CONSTITUENCY DUMMY	22,979	0.485	0	0.500	0	0	1	1
POLICY UNCERTAINTY	22,979	4.698	4.685	0.287	4.251	4.501	4.911	5.150

Panel B: Observations by *PC BOARD*

	PC BOARD= 0				*PC BOARD*= 1				Diff. in	
Variable	N	Mean	Median	St. Dev	N	Mean	Median	St. Dev	Means	*p*-value
CAPX(1)	10,818	0.013	0.009	0.014	12,161	0.013	0.009	0.012	0.000	0.35
CAPX(2)	10765	0.013	0.009	0.014	12109	0.013	0.009	0.012	0.000	0.57
CAPX(3)	10713	0.013	0.009	0.013	12063	0.013	0.009	0.012	0.000	0.97
CAPX(4)	10685	0.013	0.009	0.013	12029	0.013	0.009	0.012	0.000	0.76
TOBIN'S Q	10,818	2.358	1.941	1.408	12,161	2.248	1.814	1.366	0.110	0.00
OCF	10,818	0.033	0.031	0.032	12,161	0.032	0.030	0.028	0.001	0.04
GROWTH	10,818	0.114	0.077	0.254	12,161	0.087	0.061	0.215	0.027	0.00

Panel C: Observations by Year

Year	N
2000	1,149
2001	1,179
2002	1,235
2003	1,252
2004	1,270
2005	1,285
2006	1,303
2007	1,323
2008	1,328
2009	1,328
2010	1,349
2011	1,351
2012	1,361
2013	1,361
2014	1,321
2015	1,254
2016	1,186
2017	1,144
Total	22,979

Notes: This table contains summary statistics for our sample. The sample includes quarterly observations from S&P 500 firms across the 2000 to 2017 calendar years. We exclude financial (SIC 6000 - 6999) and utility (SIC 4900 - 4949) firms from the sample. See Appendix B for variable definitions. Panel A shows summary statistics for the entire sample. Panel B shows selected descriptive statistics while conditioning on *PC BOARD*. Panel C shows the number of observations by year.

TABLE 2
Investment Sensitivity to Policy Uncertainty and Politically Connected Boards

	Dependent variable							
	CAPX(1)		*CAPX*(2)		*CAPX*(3)		*CAPX*(4)	
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
POLICY UNCERTAINTY	-0.0022**	-0.0035**	-0.0021**	-0.0033**	-0.0019*	-0.0031**	-0.0017*	-0.0028**
	(-4.30)	(-5.14)	(-3.69)	(-4.23)	(-2.80)	(-3.52)	(-2.83)	(-3.55)
PC BOARD		-0.0002		-0.0001		-0.0001		-0.0001
		(-0.40)		(-0.28)		(-0.14)		(-0.21)
POLICY UNCERTAINTY		0.0025**		0.0024*		0.0022*		0.0020*
× PC BOARD		-3.36		-3.14		-2.9		-2.74
TOBIN'S Q	0.0019***	0.0019***	0.0018***	0.0018***	0.0016***	0.0016***	0.0015***	0.0015***
	-9.54	-9.6	-8.56	-8.61	-7.47	-7.53	-7.98	-8.05
OCF	0.0212	0.0215	0.0266*	0.0269*	0.0257*	0.0260*	0.0224*	0.0226*
	-2.22	-2.26	-3.09	-3.12	-3.01	-3.04	-2.56	-2.59
GROWTH	0.0035**	0.0034**	0.0037***	0.0036***	0.0038***	0.0037***	0.0035***	0.0035***
	-5.6	-5.56	-6.94	-6.88	-6.33	-6.32	-6.92	-6.85
GDP GROWTH	-0.0004	-0.0005	0.0112	0.011	0.0175	0.0173	0.0177*	0.0175*
	(-0.04)	(-0.06)	-1.25	-1.22	-2.22	-2.21	-2.84	-2.81
ELECTION	0.0006**	0.0006**	0.0003	0.0003	0.0001	0.0001	-0.0004*	-0.0004*
	-4.38	-4.37	-1.97	-1.97	-0.24	-0.23	(-2.58)	(-2.61)
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Seasonal dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	22,979	22,979	22,874	22,874	22,776	22,776	22,714	22,714
Adj. R^2	0.67	0.67	0.67	0.67	0.68	0.68	0.68	0.68

Notes: This table presents results from estimating equation (1). See Appendix B for variable definitions and Table 1 for details on sample composition. Seasonal dummies include controls for calendar quarter, as well as fiscal quarter. We winsorize continuous variables at the 1st and 99th percentiles. Standard errors are robust and clustered by firm and calendar quarter, as noted. t-statistics are reported in parentheses. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two-tailed).

TABLE 3
Variation in Political Board Connections

	Dependent Variable			
	CAPX(1)	*CAPX*(2)	*CAPX*(3)	*CAPX*(4)
Variable	(1)	(2)	(3)	(4)
POLICY UNCERTAINTY	-0.0033**	-0.0031**	-0.0029**	-0.0026**
	(-5.07)	(-4.09)	(-3.44)	(-3.63)
PC WHITE HOUSE	-0.0002	-0.0002	-0.0002	-0.0003
	(-0.36)	(-0.51)	(-0.43)	(-0.63)
PC CONGRESS	0.0009	0.0009	0.0009	0.0008
	(1.12)	(1.08)	(1.10)	(1.10)
PC PRES COMM	-0.0005	-0.0005	-0.0004	-0.0004
	(-1.02)	(-1.06)	(-0.92)	(-0.89)
PC OTHER	-0.0011	-0.0010	-0.0010	-0.0011
	(-1.32)	(-1.27)	(-1.29)	(-1.44)
POLICY UNCERTAINTY	0.0004	0.0003	0.0002	0.0001
x PC WHITE HOUSE	(0.41)	(0.33)	(0.28)	(0.06)
POLICY UNCERTAINTY	0.0021	0.0019	0.0020	0.0016
x PC CONGRESS	(1.75)	(1.58)	(1.42)	(1.01)
POLICY UNCERTAINTY	0.0025**	0.0024*	0.0022*	0.0022*
x PC PRES COMM	(3.24)	(3.01)	(2.52)	(2.81)
POLICY UNCERTAINTY	0.0004	0.0005	0.0007	0.0009
x PC OTHER	(0.41)	(0.54)	(0.68)	(0.99)
TOBIN'S Q	0.0019***	0.0018***	0.0016***	0.0015***
	(9.63)	(8.64)	(7.55)	(8.06)
OCF	0.0215	0.0269*	0.0260*	0.0226*
	(2.25)	(3.12)	(3.04)	(2.59)
GROWTH	0.0033**	0.0036***	0.0037***	0.0034***
	(5.54)	(6.84)	(6.22)	(6.79)
GDP GROWTH	0.0001	0.0116	0.0180	0.0181*
	(0.01)	(1.30)	(2.31)	(2.90)
ELECTION	0.0006**	0.0003	0.0000	-0.0004*
	(4.27)	(1.94)	(0.21)	(-2.64)
Constant	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes
Seasonal dummies	Yes	Yes	Yes	Yes
Observations	22,979	22,874	22,776	22,714
Adj. R^2	0.6676	0.6740	0.6790	0.6791

Notes: This table presents results from estimating equation (1) with the four variables *PC WHITE HOUSE*, *PC CONGRESS*, *PC PRES COMM*, and *PC OTHERS* each representing one of the board connection subcategories instead of the general variable *PC BOARD*. See Appendix B for variable definitions and Table 1 for details on sample composition. Seasonal dummies include controls for calendar quarter, as well as fiscal quarter. We winsorize continuous variables at the 1st and 99th percentiles. Standard errors are robust and clustered by firm and calendar quarter, as noted. t-statistics are reported in parentheses. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two-tailed).

TABLE 4
Presidential Committee Board Connectedness and Campaign Contributions

	Dependent Variable= *CAPX*(1)					
Variable	(1)	(2)	(3)	(4)	(5)	(6)
POLICY UNCERTAINTY	-0.0031**	-0.0035**	-0.0030**	-0.0034**	-0.0030**	-0.0034**
	(-4.52)	(-4.94)	(-4.39)	(-4.83)	(-4.56)	(-5.01)
[CONTRIBUTIONS]	-0.0007**	-0.0007**	-0.0003**	-0.0003**	-0.0008**	-0.0008**
	(-3.88)	(-3.77)	(-3.75)	(-3.65)	(-3.49)	(-3.40)
POLICY UNCERTAINTY	0.0005**	0.0004*	0.0002*	0.0001	0.0006**	0.0005*
× [CONTRIBUTIONS]	(3.27)	(2.58)	(2.95)	(2.31)	(3.32)	(2.54)
PC PRES COMM		-0.0001		-0.0001		-0.0001
		(-0.24)		(-0.25)		(-0.20)
POLICY UNCERTAINTY		0.0018*		0.0020*		0.0020*
× *PC PRES COMM*		(2.37)		(2.61)		(2.53)
TOBIN'S Q	0.0018***	0.0018***	0.0018***	0.0018***	0.0018***	0.0019***
	(9.35)	(9.40)	(9.29)	(9.35)	(9.34)	(9.40)
OCF	0.0214	0.0215	0.0214	0.0215	0.0214	0.0215
	(2.29)	(2.30)	(2.33)	(2.34)	(2.27)	(2.28)
GROWTH	0.0031**	0.0031**	0.0031**	0.0031**	0.0031**	0.0031**
	(5.24)	(5.26)	(5.19)	(5.20)	(5.27)	(5.28)
GDP GROWTH	0.0008	0.0007	0.0007	0.0005	0.0005	0.0004
	(0.09)	(0.07)	(0.07)	(0.06)	(0.06)	(0.04)
ELECTION	0.0005**	0.0005**	0.0005**	0.0005**	0.0005**	0.0005**
	(4.19)	(4.11)	(4.15)	(4.07)	(4.19)	(4.11)
CONTRIBUTIONS	Candidate		Financial		Constituency	
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Seasonal dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	22,979	22,979	22,979	22,979	22,979	22,979
Adj. R^2	0.67	0.67	0.67	0.67	0.67	0.67

Notes: This table presents results from estimating equation (2). See Appendix B for variable definitions and Table 1 for details on sample composition. Seasonal dummies include controls for calendar quarter, as well as fiscal quarter. We winsorize continuous variables at the 1st and 99th percentiles. Standard errors are robust and clustered by firm and calendar quarter, as noted. t-statistics are reported in parentheses. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two-tailed).

TABLE 5
Extended Controls for Investment Opportunities and Economic Uncertainty

	Dependent Variable			
	CAPX(1)	*CAPX*(2)	*CAPX*(3)	*CAPX*(4)
Variable	(1)	(2)	(3)	(4)
POLICY UNCERTAINTY	-0.0045***	-0.0045**	-0.0043**	-0.0038**
	(-7.60)	(-5.32)	(-3.81)	(-5.12)
PC PRES COMM	0.0002	0.0001	0.0001	0.0001
	(0.41)	(0.25)	(0.20)	(0.19)
POLICY UNCERTAINTY	0.0027**	0.0025*	0.0022*	0.0022*
× PC PRES COMM	(3.37)	(3.14)	(2.81)	(3.03)
TOBIN'S Q	0.0018***	0.0017***	0.0016***	0.0015***
	(9.35)	(8.39)	(7.42)	(7.82)
OCF	0.0214	0.0267**	0.0257*	0.0221*
	(2.33)	(3.19)	(3.04)	(2.58)
GROWTH	0.0025**	0.0028**	0.0030**	0.0028**
	(4.43)	(5.54)	(5.14)	(5.71)
GDP GROWTH	0.0727***	0.0574***	0.0384**	0.0198**
	(11.38)	(7.41)	(4.55)	(3.72)
ELECTION	-0.0001	-0.0003	-0.0005	-0.0009*
	(-0.32)	(-1.02)	(-1.05)	(-2.88)
EXPECTED GDP GORWTH	0.0321**	0.0375	0.0432	0.0597
	(3.22)	(1.55)	(1.89)	(2.35)
LEADING ECONOMIC	-0.0149**	-0.0088	-0.0032	0.0004
INDEX	(-4.24)	(-2.18)	(-0.64)	(0.10)
CONSUMER CONFIDENCE	-0.0084**	-0.0081**	-0.0066*	-0.0050*
	(-5.67)	(-4.44)	(-2.79)	(-2.44)
GDP FORECAST	-0.0008	-0.0000	0.0007	0.0013**
DISPERSION	(-1.19)	(-0.03)	(1.45)	(3.45)
PROFIT GROWTH SD	-0.0004	-0.0066*	-0.0071	-0.0069
	(-0.17)	(-2.70)	(-2.21)	(-2.27)
VXO	0.0007	0.0004	0.0003	0.0001
	(1.42)	(0.62)	(0.95)	(0.14)
RETURN SD	0.0276**	0.0348**	0.0322**	0.0285***
	(5.40)	(5.78)	(4.32)	(7.86)
JLN UNCERTAINTY	-0.0023	-0.0026	-0.0022	-0.0009
	(-1.46)	(-1.94)	(-1.80)	(-0.99)
Constant	Yes	Yes	Yes	Yes
Firm/seasonal fixed effects	Yes	Yes	Yes	Yes
Observations	22,979	22,874	22,776	22,714
Adj. R^2	0.68	0.68	0.68	0.68

Notes: This table presents results from estimating equation (1) with the extended control variables for investment opportunities and economic uncertainty. See Appendix B for variable definitions and Table 1 for details on sample composition. Seasonal dummies include controls for calendar quarter, as well as fiscal quarter. We winsorize continuous variables at the 1st and 99th percentiles. Standard errors are robust and clustered by firm and calendar quarter, as noted. t-statistics are reported in parentheses. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two-tailed).

TABLE 6
Omitted Variables

Panel A: Impact Threshold of Confounding Variable (ITCV)

	Dependent Variable			
	CAPX(1)	*CAPX*(2)	*CAPX*(3)	*CAPX*(4)
Variable	(1)	(2)	(3)	(4)
Impact threshold of a confounding variable				
POLICY UNCERTAINTY × *PC PRES COMM*	0.0096	0.0082	0.0059	0.0072
Partial impact of main effects				
POLICY UNCERTAINTY	-0.0350	-0.0370	-0.0280	-0.0260
PC PRES COMM	-0.0010	-0.0010	-0.0010	-0.0010
Partial impact of control variables				
TOBIN'S Q	0.0010	0.0010	0.0010	0.0010
OCF	-0.0030	-0.0030	-0.0030	-0.0040
GROWTH	0.0030	0.0030	0.0030	0.0030
GDP GROWTH	0.0000	0.0000	0.0000	0.0000
ELECTION	0.0000	0.0000	0.0000	0.0000

Panel B: Identified set from Oster (2019)

	Identified Set for *POLICY UNCERTAINTY x PC PRES COMM*		
	$[\tilde{\beta}, \beta^{*'}(1.25\tilde{R}, 1)]$	$[\tilde{\beta}, \beta^{*'}(1.3\tilde{R}, 1)]$	$[\tilde{\beta}, \beta^{*'}(2.2\tilde{R}, 1)]$
Independent Variable	(1)	(2)	(3)
CAPX(1)	[0.0027 ; 0.0041]	[0.0027 ; 0.0044]	[0.0027 ; 0.0094]
CAPX(2)	[0.0025 ;0.0040]	[0.0025 ; 0.0043]	[0.0025 ; 0.0096]
CAPX(3)	[0.0023 ;0.0036]	[0.0023 ; 0.0038]	[0.0023 ; 0.0086]
CAPX(4)	[0.0022 ;0.0034]	[0.0022 ; 0.0037]	[0.0022 ; 0.0082]

Notes: This table presents additional omitted variables tests. The results for the impact threshold of a confounding variable test are provided in Panel A. In Panel B we provide the identified set from Oster (2019). See Appendix B for variable definitions and Table 1 for details on sample composition.

TABLE 7
Entropy Balancing

Panel A: Entropy Balancing Statistics

	After Entropy Balancing			
	PC PRES COMM= 1		*PC PRES COMM* = 0	
Variable	Mean	Variance	Mean	Variance
TOBIN'S Q	2.267	1.734	2.268	1.738
OCF	0.033	0.001	0.033	0.001
GROWTH	0.078	0.043	0.078	0.044

Panel B: Entropy Balanced Regression Results

	Dependent Variable			
	CAPX(1)	*CAPX*(2)	*CAPX*(3)	*CAPX*(4)
Variable	(1)	(2)	(3)	(4)
POLICY UNCERTAINTY	-0.0029**	-0.0027**	-0.0025*	-0.0022**
	(-5.45)	(-4.18)	(-3.11)	(-3.40)
PC PRES COMM	-0.0004	-0.0003	-0.0003	-0.0002
	(-0.90)	(-0.82)	(-0.64)	(-0.61)
POLICY UNCERTAINTY	0.0025**	0.0023*	0.0020*	0.0019*
× PC PRES COMM	(3.35)	(3.00)	(2.64)	(2.81)
TOBIN'S Q	0.0018***	0.0017***	0.0016***	0.0015***
	(11.18)	(10.24)	(9.02)	(10.52)
OCF	0.0201*	0.0217**	0.0214**	0.0218**
	(2.52)	(3.35)	(3.63)	(3.76)
GROWTH	0.0031**	0.0035***	0.0037**	0.0034***
	(4.26)	(6.15)	(5.76)	(6.79)
GDP GROWTH	0.0029	0.0127	0.0175*	0.0170*
	(0.36)	(1.63)	(2.37)	(3.16)
ELECTION	0.0004**	0.0002	-0.0000	-0.0004**
	(3.95)	(1.50)	(-0.11)	(-3.45)
Constant	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes
Seasonal dummies	Yes	Yes	Yes	Yes
Cluster by firm and qtr	Yes	Yes	Yes	Yes
Observations	22,979	22,874	22,776	22,714
Adj. R^2	0.67	0.68	0.68	0.69

Notes: This table presents results from estimating equation (1) with the entropy balanced sample. See Appendix B for variable definitions and Table 1 for details on sample composition. Panel A shows selected descriptive statistics after entropy balancing while conditioning on PC PRES COMM. Panel B shows the entropy balanced regression results. Seasonal dummies include controls for calendar quarter, as well as fiscal quarter. We winsorize continuous variables at the 1st and 99th percentiles. Standard errors are robust and clustered by firm and calendar quarter, as noted. t-statistics are reported in parentheses. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two-tailed).

TABLE 8
Instrumental Variable (IV) Regression

Panel A: Presidential Committee Appointments

	Dependent Variable					
	1st Stage		2nd Stage			
Variable	*PC PRES COMM*	*PC PRES COMM* × *POLICY Un.*	*CAPX*(1)	*CAPX*(2)	*CAPX*(3)	*CAPX*(4)
	(1)	(2)	(3)	(4)	(5)	(6)
POLICY UNCERTAINTY	0.0370	0.2379***	-0.0036**	-0.0033**	-0.0031**	-0.0028**
	(1.75)	(11.42)	(-5.17)	(-4.11)	(-3.51)	(-3.83)
PC PRES C.(IV)			-0.0002	-0.0002	-0.0001	-0.0000
			(-0.28)	(-0.25)	(-0.16)	(-0.03)
POLICY UNCERTAINTY × PC PRES C.(IV)			0.0041**	0.0036**	0.0034**	0.0033**
			(3.90)	(3.38)	(3.60)	(3.71)
APPOINT	0.3131**	-0.0078				
	(5.03)	(-1.76)				
POLICY UNCERTAINTY × APPOINT	-0.0966**	0.4340***				
	(-3.60)	(9.63)				
TOBIN'S Q	0.0012	-0.0029	0.0019***	0.0018***	0.0016***	0.0015***
	(0.17)	(-1.50)	(9.69)	(8.68)	(7.62)	(8.14)
OCF	0.0556	-0.0690	0.0216	0.0270*	0.0260*	0.0227*
	(0.73)	(-1.89)	(2.27)	(3.13)	(3.06)	(2.60)
GROWTH	-0.0354	0.0069	0.0034**	0.0036***	0.0037***	0.0035***
	(-2.20)	(1.26)	(5.56)	(6.89)	(6.34)	(6.86)
GDP GROWTH	0.1414	-0.0452	-0.0008	0.0108	0.0172	0.0172*
	(0.66)	(-0.88)	(-0.08)	(1.22)	(2.21)	(2.78)
ELECTION	-0.0030	0.0029	0.0005**	0.0003	0.0000	-0.0004*
	(-0.85)	(2.35)	(4.20)	(1.87)	(0.15)	(-2.69)
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Seasonal dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	22,979	22,979	22,979	22,874	22,776	22,714
Adj. R^2	0.69	0.57	0.67	0.67	0.68	0.68
Kleibergen-Paap LM stat			3.828	3.827	3.826	3.826
Kleibergen-Paap (p-value)			0.0504	0.0504	0.0505	0.0505
Cragg-Donald Wald F stat			2383	2372	2351	2343
Kleibergen-Paap Wald F stat			12.44	12.37	12.28	12.25

Panel B: Mandatory Retirements of Presidential Committee Board Members

	Dependent Variable					
	1st Stage		2nd Stage			
Variable	*PC PRES COMM*	*PC PRES COMM* × *POLICY Un.*	*CAPX*(1)	*CAPX*(2)	*CAPX*(3)	*CAPX*(4)
	(1)	(2)	(3)	(4)	(5)	(6)
POLICY UNCERTAINTY	0.0610*	0.2817***	-0.0046**	-0.0043**	-0.0044**	-0.0042**
	(2.73)	(12.82)	(-4.68)	(-4.13)	(-3.84)	(-4.10)
PC PRES COMM (IV)			0.0039	0.0033	0.0036	0.0033
			(2.27)	(2.14)	(2.30)	(2.12)
POLICY UNCERTAINTY × PC PRES COMM (IV)			0.0065*	0.0060*	0.0067**	0.0066**
			(3.12)	(3.02)	(3.50)	(3.64)
RETIRED	-0.2282**	0.0271				
	(-5.09)	(2.23)				
POLICY UNCERTAINTY × RETIRED	0.0294	0.2243***				
	(1.26)	(6.47)				
TOBIN'S Q	-0.0070	-0.0038	0.0019***	0.0018***	0.0017***	0.0016***
	(-0.87)	(-1.62)	(9.87)	(8.85)	(7.77)	(8.37)
OCF	0.1412	-0.0663	0.0212	0.0267*	0.0259*	0.0225*
	(1.48)	(-1.40)	(2.24)	(3.11)	(3.01)	(2.59)
GROWTH	-0.0680**	0.0110	0.0036**	0.0038***	0.0039***	0.0036***
	(-3.71)	(1.79)	(5.78)	(7.08)	(6.46)	(7.01)
GDP GROWTH	0.5672	0.0810	-0.0033	0.0086	0.0147	0.0150
	(2.24)	(1.26)	(-0.37)	(0.95)	(1.77)	(2.32)
ELECTION	-0.0149**	0.0039*	0.0006**	0.0004	0.0001	-0.0004*
	(-3.84)	(2.72)	(4.57)	(1.95)	(0.26)	(-2.55)
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Seasonal dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	22,979	22,979	22,979	22,874	22,776	22,714
Adj. R^2	0.64	0.44	0.66	0.67	0.67	0.67
Kleibergen-Paap LM stat			3.646	3.644	3.641	3.630
Kleibergen-Paap (p-value)			0.0562	0.0563	0.0564	0.0567
Cragg-Donald Wald F stat			526.4	520.4	514.6	498.9
Kleibergen-Paap Wald F stat			15.90	15.88	15.57	15.02

Notes: This table presents results from estimating equation (1) with a two-stage least squares (2SLS) instrumental variable regression. See Appendix B for variable definitions and Table 1 for details on sample composition. Panel A shows the regression results using the instrumental variable *APPOINT*. Panel B shows the regression results using the instrumental variable *RETIRED*. Seasonal dummies include controls for calendar quarter, as well as fiscal quarter. We winsorize continuous variables at the 1st and 99th percentiles. Standard errors are robust and clustered by firm and calendar quarter, as noted. t-statistics are reported in parentheses. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two-tailed).

TABLE 9
Cross-Sectional Variation in Investment Irreversibility

Panel A: Capital Intensity

	Dependent Variable							
	CAPITAL INTENSIVE= 0				*CAPITAL INTENSIVE*= 1			
	CAPX(1)	*CAPX*(2)	*CAPX*(3)	*CAPX*(4)	*CAPX*(1)	*CAPX*(2)	*CAPX*(3)	*CAPX*(4)
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
POLICY	-0.0011**	-0.0013**	-0.0011**	-0.0011*	-0.0046**	-0.0041**	-0.0038*	-0.0033*
UNCERTAINTY	(-3.64)	(-3.77)	(-3.67)	(-2.85)	(-4.47)	(-3.46)	(-2.56)	(-2.62)
PC PRES COMM	-0.0004	-0.0004	-0.0003	-0.0002	-0.0008	-0.0008	-0.0008	-0.0008
	(-1.05)	(-1.10)	(-0.83)	(-0.56)	(-1.13)	(-1.20)	(-1.19)	(-1.27)
POLICY								
UNCERTAINTY	0.0009	0.0011*	0.0003	0.0004	0.0044**	0.0039*	0.0041*	0.0039*
× *PC PRES COMM*	(1.96)	(2.84)	(0.52)	(0.83)	(3.30)	(2.86)	(3.01)	(3.17)
Controls & Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm/seasonal FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,436	11,386	11,343	11,319	11,523	11,468	11,413	11,374
Adj. R^2	0.42	0.42	0.43	0.43	0.63	0.63	0.64	0.64

Panel B: High Sunk Costs

	Dependent Variable							
	SUNK COST INDEX= 0				*SUNK COST INDEX*= 2			
	CAPX(1)	*CAPX*(2)	*CAPX*(3)	*CAPX*(4)	*CAPX*(1)	*CAPX*(2)	*CAPX*(3)	*CAPX*(4)
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
POLICY	-0.0008	-0.0009	-0.0007	-0.0010	-0.0034*	-0.0032*	-0.0026	-0.0027
UNCERTAINTY	(-1.29)	(-1.81)	(-1.55)	(-1.29)	(-3.02)	(-2.74)	(-2.14)	(-2.12)
PC PRES COMM	0.0009	0.0008	0.0008	0.0008	-0.0004	-0.0003	-0.0005	-0.0005
	(1.49)	(1.39)	(1.44)	(1.57)	(-0.36)	(-0.23)	(-0.37)	(-0.41)
POLICY								
UNCERTAINTY	0.0004	0.0006	-0.0001	0.0003	0.0051*	0.0042*	0.0043*	0.0038
× *PC PRES COMM*	(0.52)	(0.93)	(-0.13)	(0.43)	(2.76)	(2.72)	(3.04)	(2.19)
Controls & Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Firm/seasonal FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,101	5,082	5,068	5,063	2,513	2,505	2,493	2,487
Adj. R^2	0.67	0.67	0.67	0.69	0.59	0.60	0.60	0.62

Panel C: Durable Goods

	Dependent Variable							
	DURABLE INDUSTRY= 0				*DURABLE INDUSTRY*= 1			
	CAPX(1)	*CAPX*(2)	*CAPX*(3)	*CAPX*(4)	*CAPX*(1)	*CAPX*(2)	*CAPX*(3)	*CAPX*(4)
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
POLICY	-0.0037**	-0.0034**	-0.0029**	-0.0025**	-0.0027**	-0.0027**	-0.0029*	-0.0030*
UNCERTAINTY	(-4.86)	(-3.65)	(-3.22)	(-3.28)	(-3.27)	(-3.23)	(-2.80)	(-2.84)
PC PRES COMM	-0.0003	-0.0004	-0.0004	-0.0005	-0.0002	-0.0001	-0.0000	0.0002
	(-0.60)	(-0.75)	(-0.71)	(-0.85)	(-0.28)	(-0.11)	(-0.02)	(0.37)
POLICY								
UNCERTAINTY	0.0034*	0.0030*	0.0026*	0.0023*	0.0023*	0.0023	0.0025	0.0027*
× *PC PRES COMM*	(2.83)	(2.56)	(2.38)	(2.37)	(2.39)	(2.08)	(2.22)	(2.42)
Controls & Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm/seasonal FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	13,714	13,656	13,595	13,554	9,222	9,201	9,179	9,160
Adj. R^2	0.72	0.73	0.73	0.74	0.58	0.59	0.60	0.60

Notes: This table presents results from estimating equation (1) for subsamples with low and high investment irreversibility. We proxy for investment irreversibility with capital intensity in Panel A, sunk costs in Panel B, and durability in Panel C. See Appendix B for variable definitions and Table 1 for details on sample composition. Seasonal dummies include controls for calendar quarter, as well as fiscal quarter. We winsorize continuous variables at the 1st and 99th percentiles. Standard errors are robust and clustered by firm and calendar quarter, as noted. t-statistics are reported in parentheses. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two-tailed).

TABLE 10
Cross-Sectional Variation in the Number of Presidential Committee Board Members

	Dependent Variable							
	CAPX(1)		CAPX(2)		CAPX(3)		CAPX(4)	
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
POLICY UNCERTAINTY	-0.0028**	-0.0030**	-0.0026**	-0.0028**	-0.0024*	-0.0026**	-0.0022**	-0.0023**
	(-4.93)	(-5.14)	(-3.97)	(-4.07)	(-3.16)	(-3.18)	(-3.40)	(-3.42)
PC PRES COMM SUM	-0.0001	-0.0002	-0.0002	-0.0002	-0.0001	-0.0001	-0.0001	-0.0001
	(-0.63)	(-0.40)	(-0.68)	(-0.47)	(-0.44)	(-0.38)	(-0.31)	(-0.36)
PC PRES COMM SUM^2		0.0000		0.0000		0.0000		0.0000
		(0.13)		(0.20)		(0.23)		(0.31)
POLICY UNCERTAINTY	0.0012*	0.0022*	0.0011*	0.0019*	0.0010*	0.0018*	0.0009*	0.0017*
× *PC PRES COMM SUM*	(2.88)	(3.13)	(2.82)	(2.72)	(2.71)	(2.38)	(2.89)	(2.63)
POLICY UNCERTAINTY		-0.0003*		-0.0003		-0.0003		-0.0002
× *PC PRES COMM SUM*^{2}		(-2.56)		(-2.20)		(-1.75)		(-1.93)
TOBIN'S Q	0.0019***	0.0019***	0.0018***	0.0018***	0.0016***	0.0016***	0.0015***	0.0015***
	(9.59)	(9.62)	(8.61)	(8.63)	(7.53)	(7.55)	(8.03)	(8.05)
OCF	0.0213	0.0214	0.0268*	0.0268*	0.0259*	0.0259*	0.0225*	0.0225*
	(2.24)	(2.25)	(3.10)	(3.11)	(3.03)	(3.03)	(2.57)	(2.58)
GROWTH	0.0034**	0.0034**	0.0037***	0.0036***	0.0038***	0.0038***	0.0035***	0.0035***
	(5.57)	(5.57)	(6.90)	(6.90)	(6.32)	(6.33)	(6.87)	(6.88)
GDP GROWTH	-0.0005	-0.0005	0.0111	0.0111	0.0174	0.0174	0.0175*	0.0175*
	(-0.06)	(-0.05)	(1.24)	(1.24)	(2.22)	(2.23)	(2.77)	(2.79)
ELECTION	0.0005**	0.0005**	0.0003	0.0003	0.0000	0.0000	-0.0004*	-0.0004*
	(4.25)	(4.23)	(1.92)	(1.91)	(0.19)	(0.18)	(-2.63)	(-2.65)
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Seasonal dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	22,979	22,979	22,874	22,874	22,776	22,776	22,714	22,714
Adj. R^2	0.67	0.67	0.67	0.67	0.68	0.68	0.68	0.68

Notes: This table presents results from estimating equation (1) with the count variable *PC PRES COMM SUM* and its squared term instead of the general variable *PC BOARD*. See Appendix B for variable definitions and Table 1 for details on sample composition. Seasonal dummies include controls for calendar quarter, as well as fiscal quarter. We winsorize

continuous variables at the 1st and 99th percentiles. Standard errors are robust and clustered by firm and calendar quarter, as noted. t-statistics are reported in parentheses. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two-tailed).

TABLE 11
Market Reaction to the Announcement of Presidential Committee Board Appointments

	Dependent Variable= Cumulative Abnormal Return (*CAR*)							
	(0,+1)	(0,+1)	(-1,+1)	(-1,+1)	(0,+1)	(0,+1)	(-1,+1)	(-1,+1)
Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
POLICY	0.0040	0.0034	0.0091*	0.0085*	0.0035	0.0030	0.0082*	0.0077*
UNCERTAINTY	(1.05)	(0.95)	(1.94)	(1.86)	(0.93)	(0.84)	(1.79)	(1.72)
PC PRES COMM		-0.0090		-0.0112		-0.0070		-0.0065
		(-1.16)		(-1.13)		(-0.98)		(-0.71)
POLICY								
UNCERTAINTY		0.0326***		0.0320**		0.0308***		0.0281**
× *PC PRES COMM*		(3.00)		(2.43)		(2.84)		(2.20)
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Method	FFM	FFM	FFM	FFM	FFM	FFM	FFM	FFM
Weight	Equal	Equal	Equal	Equal	Value	Value	Value	Value
Observations	144	144	144	144	144	144	144	144
Adj. R^2	0.00	0.05	0.02	0.04	0.00	0.05	0.01	0.03

Notes: This table presents results from estimating equation (3). See Appendix B for variable definitions and Table 1 for details on sample composition. We use an equal-weighting aggregation scheme in Columns (1) to (4) and a value-weighting aggregation scheme in Columns (5) to (8). We winsorize continuous variables at the 1st and 99th percentiles. Standard errors are robust. t-statistics are reported in parentheses. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two-tailed).